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THE

BIRDS OF AFRICA,

COMPRISING ALL THE SPECIES WHICH OCCUR

IN THE

ETHIOPIAN REGION.

BY

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Order I. PASSERIFORMES.

Suborder II. OSCINES.

Section II. ALAUDÆ.

Family VII. MOTACILLIDÆ.

Genus III. MACRONYX.

The Long-claws, as Dr. Bowdler Sharpe calls them, in the "Birds of South Africa," may be described as heavily-built Pipits. Their feet are extremely large, the hind claw long, and also the tarsus, so that the outstretched feet extend well beyond the end of the tail, although the tail is not abnormally short. This character, together with the bright colouring of the throat, and often of the breast, render the species of this genus easily recognisable. Anatomically they are Pipits.

	Type.
Macronyx, Swains. Zool. Journ. iii. p. 344 (1817)	M. capensis.

KEY TO THE SPECIES.

a. Five outer pairs of tail-feathers with white ends; throat and centre of breast reddish orange . . . . . *capensis*.

b. Four outer pairs of tail-feathers with white ends; no shade of red on the throat or breast.

a^1. Throat and some of the breast bright lemon yellow.

a^2. Smaller; wing less than 4 inches; upper parts paler; less brown on the breast *croceus*.

b^2. Larger; wing 4·2 to 4·4; upper parts darker; more brown on the breast . . *fuelleborni*.

b^1. Throat orange yellow; eyebrow brownish, with only the portion in front of the eye orange.
c^2. Some yellow on the middle of the abdomen . . . . . *aurantiigula.*
d^2. No yellow on the breast or abdomen . *flavicollis.*
c. Three outer pairs of tail-feathers with white ends; throat and centre of the breast carmine red . . . . . *ameliæ.*

Macronyx capensis.

Alauda capensis, Linn. S. N. I. p. 288 (1766) *Cape of Good Hope.*
Macronyx capensis, Sharpe, Cat. B. M. x. p. 623 (1885) *Cape Col., Natal, Transvaal;* Simonds, Ibis, 1887, p. 333 *Orange River State;* Distant, Naturalist in Transvaal, p. 164 (1892); Kuschel, J. f. O. 1895, p. 343 *egg*; Shelley, B. Afr. I. No. 171 (1896); Sharpe, Ibis, 1897, pp. 412, 514 *Zululand;* Nehrkorn, Kat. Eiers. p. 93 (1899) *egg*; Stark, Faun. S. Afr. B. i. p. 238 (1900); Marshall, Ibis, 1900, p. 238, *Mashona.*

Adult male. Upper parts mottled brown, the feathers with blackish brown centres and broad pale edges; lesser wing-coverts partially washed with orange yellow on their edges; bend of wing orange yellow; ends of primary-coverts, quills and outer web of first primary narrowly edged with white; the five outer pairs of tail-feathers have white ends widening towards the outer one, which has the outer web white; a broad orange yellow eyebrow extends from the nostril; remainder of the side of the head buffy brown, washed with orange and inclining to white in front of the eye; a narrow black band extends down the sides of the throat and widens out into a broad black collar across the crop, enclosing a bright orange red throat; centre of body, thighs and under tail-coverts chrome yellow, the latter with large black bases to some of the feathers, and shading into buffy brown on the flanks, which show some dark shaft-stripes; axillaries white, partially washed with yellow; under wing-coverts white, passing into orange yellow at the bend of the wing; quills ashy brown with partial narrow pale inner edges. Bill grey with the culmen and tip dusky; iris hazel, tarsi and feet dull chrome yellow. Total length 8 inches, culmen 0·65, wing 3·9, tail 4, tarsus 1·35. Newcastle, ♂, 13. 6. 81 (A. E. Butler).

Adult female. Very similar in plumage to the male, but slightly duller; eyebrow and throat paler and rather less yellow on the breast. Upper mandible brown, lower one grey; iris brown, legs flesh-colour. Pinetown, ♀, 7. 1. 75 (T. L. Ayres).

Immature. Differs in having the upper parts blacker, with the pale

edges to the feathers narrower; eyebrows and throat brownish buff, very slightly mottled with orange; black throat-band absent; crop spotted with a few blackish shaft-marks; bend of wing whitish orange. Wing 3·8. Grahamstown (Layard).

The Cape Long-claw ranges from Cape Colony into Zululand and Mashona.

I met with the species near both Cape Town and Durban, singly or in pairs. They appear never to assemble in flocks, but to be very generally distributed over suitable country, such as the open veldt which is here and there interspersed with bushes and ant-hills, on the tops of which they immediately perch when disturbed. No doubt on account of this habit Levaillant called the species "L'Alouette Sentinelle," a more euphonious name than "Cut-throat Lark" or "Kalksentje;" by which they are generally known to the colonists.

Like the other members of the genus *Macronyx*, it is partial to certain localities, for Layard writes: "Mr. W. Atmore declares that it is never found on Karroo soil, and we do not remember noticing it near Beaufort; certainly it is not recorded in Victorin's collections from the Karroo, though he appears to have met with it plentifully in the Knysna district."

The species is common in Southern Cape Colony, Natal, Zululand and the Transvaal; but according to Dr. Bradshaw it is not found along the northern border of Cape Colony, and it has never been recorded from so far north as the Zambesi River.

Mr. T. E. Buckley writes: "Very common through Natal and the High Veldt part of the Transvaal. They are found singly or in pairs, and fly with several very rapid beats of the wing together, uttering their call-note all the time, which is exactly what Layard calls mewing." Mr. T.

Ayres considered this species to be the commonest and most regularly distributed of all the Pipits in the Transvaal and met with it as far north as the Inshlangreen River during his expedition into Mashona with Jameson. From the latter country Mr. Guy Marshall writes: "This handsome Pipit is generally distributed throughout the open country, but is nowhere plentiful, being found only singly or in pairs."

According to Stark, they feed principally on insects and their larvæ, and occasionally a few seeds. "The nest is artfully concealed in a hollow under the grass, and is a cup-shaped structure built of dry grass and root fibres. The eggs, laid in October or November, are from three to four in number, cream-coloured, closely spotted and speckled with various shades of brown and purple. They average 1·05 × 0·77."

Macronyx croceus.

Alauda crocea, Vieill. N. Dict. H. N. i. p. 365 (1816).

Macronyx croceus, Sharpe, Ibis, 1870, p. 481 *Volta R.;* Reichen. and Lühder, J. f. O. 1873, p. 217 *Accra;* Shelley and Buckley, Ibis, 1872, p. 290 *Accra;* Fisch. J. f. O. 1878, p. 279 *Wanikaland;* id. Zeitschr. 1884, p. 308 *Maurui Kilimanjaro;* Sharpe, Cat. B. M. x. p. 626 (1885) *Gambia, Gold Coast, Niger, Gaboon, Angola, Natal, Zambesi, Dar-es-Salaam, Mombasa;* Fisch. J. f. O. 1885, p. 137 *Lindi* to *Galaland, Wapokomoland* and *Barawa;* Büttik, Notes Leyd. Mus. 1885, p. 174; 1886, p. 253 *Liberia;* Sousa, Jorn. Lisb. 1886, p. 84 *Ibo Is.;* p. 165 *Cuce;* Reichen. J. f. O. 1887, p. 73 *Ruwana R.;* Matsch. *t. c.* p. 143 *Boga-Katani;* Reichen. *t. c.* p. 305 *Leopoldville;* Shelley, P. Z. S. 1888, p. 28 *Wadelai;* Reichen. J. f. O. 1889, p. 284 *Quilimane;* Sharpe, Ibis, 1891, p. 589 *Machako's;* Reichen. J. f. O. 1892, p. 52 *Uganda;* Bocage Jorn. Lisb. 1893, p. 162 *Galanga;* Shelley, Ibis, 1893, p. 27; 1894, p. 23 *Nyasaland;* Reichen. Vög. Deutsch. O. Afr. p. 199 (1894) *Usegua, Bagamoyo, Lindi, Arusha, Ruwana, Ugalla, Karagwe, Kawende;* Kuschel, J. f. O. 1895, p. 343 *egg;* Shelley, B. Afr. I. No. 170 (1896); Rendall, Ibis, 1896, p. 174 *Transvaal;* Sharpe, Ibis, 1897,

p. 514 *Zulu;* Shelley, *t. c.* p. 527 *Nyasa;* Reichen. J. f. O. 1897, p. 42 *Togo;* Jackson, Ibis, 1898, p. 136 *Witu;* Shelley, *t. c.* pp. 379, 553 *Nyasa;* Hartert, Nov. Zool. 1898, p. 71 *Shirè;* W. L. Sclater, Ibis, 1899, p. 112 *Inhambane;* Alexander, *t. c.* p. 563 *Zambesi;* Jackson, *t. c.* p. 629 *Karirondo, Kampala, Ntebi, Mau;* Hartert in Ansorge's "Under Afr. Sun," p. 348 (1899) *Unyoro;* Nehrkorn, Kat. Eiers, p. 93 (1899) *egg;* Stark, Faun. S. Afr. i. p. 239 (1900); Sharpe, Ibis, 1900, p. 111 *Mosambique;* Marshall, *t. c.* p. 238 *Mashona;* Salvad. Ann. Mus. Genov. 1901, p. 763 *Senegambia;* Hartert, Nov. Zool. 1901, p. 340 *Niger.*

Macronyx flavigaster, Swains. B. W. Afr. i. p. 215 (1837) *Senegal;* Fraser, P. Z. S. 1843, p. 51 *Accra;* Gordon, Contr. Orn. 1849, p. 10 *Gold Coast.*

Macronyx striolatus, Heugl. J. f. O. 1863, p. 164 *Gazelle R.;* Woodward, Ibis, 1897, p. 411 *Zulu;* 1900, p. 524 *St. Lucia Lake.*

Adult male. Upper parts pale ashy or rufous brown with blackish brown centres to the feathers of the crown and mantle; wings dark brown with rather broad pale edges to the feathers, of a tawny buff shade passing into bright yellow towards the outer feathers; under wing-coverts golden yellow mottled with some black and white; under surface of quills dusky with faintly marked, broad, tawny buff inner edges; tail dark brown with the end third of the four outer pairs of feathers white; a broad yellow eyebrow, remainder of the sides of the head and neck ashy brown fading almost into white above the gape, and next to the black gorget which starts from the gape and encircles the middle and lower throat; chin and throat bright golden yellow; chest, abdomen, thighs and under tail-coverts golden yellow with black shaft-stripes on the front and sides of the chest and the flanks, which latter are partially pale tawny brown. Bill, upper mandible dark brown, lower one grey; iris brown; legs stone colour. Total length 7·5 inches, culmen 0·7, wing 3·8, tail 3·2, tarsus 1·45, middle toe with claw 1·5, hind toe with claw 1·6. Pinetown, ♂, 16. 6. 75 (T. L. Ayres).

Adult female. Exactly like the male in plumage. Total length 7·2 inches, culmen 0·75, wing 3·7, tail 3, tarsus 1·45. Pinetown, ♀, 21. 10. 75 (T. L. Ayres).

Immature. Differs from the adult in having the upper parts slightly more rufous; eyebrow tawny buff; little or no white or black on the sides of the head, neck and crop; flanks and under tail coverts mostly pale tawny buff with a few rather indistinct blackish shaft-stripes. Length in the flesh 8·5; bill flesh colour shaded with dark brown on the tip and culmen; legs pale yellowish brown. Pinetown, ♂, 14. 3. 74 (Shelley).

The Common Yellow-throated Long-claw inhabits Africa south from the Senegal and Gazelle rivers and Somaliland, avoiding the actual forest.

Although abundant throughout this wide area the birds select certain damp grassy spots, usually very limited in area, from which they rarely wander. This habit is apparently common to all the species of *Macronyx*.

The most northern locality yet recorded for this species is St. Louis, at the mouth of the Senegal river, where Laglaise procured a specimen which is now in the British Museum. Swainson received the type of his *M. flavigaster* from Senegal and Verreaux specimens, from Casamanse and Sierra Leone. Dr. Büttikofer, while in Liberia, found them abundant on the flat country by the Grand Cape Mount river after it left Fisherman Lake, though in other places, offering apparently the same conditions, he never saw a specimen.

On the Gold Coast Ussher found these birds almost invariably in pairs and remarks: "The male appears very fond of the female, and while the latter remains on the ground the male will take a short flight or soar above her. They will frequently perch on bushes, especially if disturbed, but as a rule they prefer marshy and grassy ground."

The genus *Macronyx* is not likely to be represented in the densely wooded mountains of Aguapim, so the specimen recorded in the list of Riis's collection from that district, no doubt came from the plains of Accra where the present species is abundant. Ussher met with it at the Volta river, and Baumann in Togoland. In the Niger district Forbes found these birds at Shonga and Mr. Hartert met with them in the Kashia valley.

The species has not been recorded from Camaroons, but has been met with in Gaboon by Du Chaillu at Cape Lopez and by Marche at Fernand Vaz. Falkenstein, Lucan and Petit have all procured specimens on the Loango Coast, and Bohndorff on the Congo river at Leopoldville. Monteiro

found them at Cambambe in Angola, where they were called "Dibaquela" by the natives. In Benguela Anchieta has collected specimens at Galanga, Ambaca, Caconda, Huilla and Cuce, at which latter place it is known to the natives as the "Kilongo."

I can find no mention of these birds from any part of Western South Africa between Huilla and Cape Town, Grahamstown being the most western locality known to me in Cape Colony, from whence the species has been procured.

According to Stark, this species is rarely found in Cape Colony. It is the commonest Long-claw in the lower parts of Natal, Zululand and the Transvaal. It "does not appear to differ in any of its habits from *M. capensis*, and in localities where the two species occur together I have in vain tried to detect any peculiarity, apart from colour, by which they might be distinguished. Their call-notes are, to my ear, exactly the same, and their eggs are exactly similar."

The eggs of this species in the British Museum are of a blunt oval shape and moderately glossy, they differ from those of *M. capensis* in the same collection only in being rather less boldly marked.

In Natal these birds are decidedly abundant in certain places. I found them generally in pairs, and when disturbed from the high grass they flew to the topmost branch of some neighbouring tree. I only met with them at Durban within half a mile of one spot; here they were fairly plentiful on a patch of marshy ground covered with tall grass and bushes, and although there is much similar country within the semicircle formed by the Berea hills, I never saw one in any other place. My friend, Mr. T. L. Ayres, collected for me many specimens at Pinetown. In Zululand Messrs. Woodwards obtained the species at Eschowe: "Common everywhere," they write, "it is naturally very tame; boys

knock over numbers of them with their sticks, and grass-fires are apt to destroy their nests."

One Transvaal specimen in the British Museum has a horny spike on each side of the throat, and in another from Natal I found a similarly placed bare patch with the indication of a small wattle. I presume that this is the effect of some disease to which the species is subject.

This Long-claw has been met with by Dr. Rendall in the Barberton district of the Transvaal, and at Inhambane by Mr. Francis, and the former naturalist remarks: "As this bird circles down and alights with outspread wings, the tail is also spread and the white rectrices are noticeable. It has a short and rather pleasing song while on the wing." Mr. H. S. H. Cavendish procured a specimen near Beira and Dr. Stuhlmann others at Quilimane, where the natives call it "Djogore Mreo." A few miles further north Serpo Pinto met with the species at Kisanga and on the adjacent island of Ibo, where the natives call it the "Esse." At the Zambesi Sir John Kirk found it abundant on the sea-coast of the Delta. Further up the river Capt. Boyd Alexander shot a pair in full breeding plumage at Senna in February. "The male bird kept perching on the tops of the bushes and uttering a pleasant song, after which it would suddenly shoot straight up into the air and alight once more a little further off." In Nyasaland specimens have been collected at Zomba, Fort Johnston, Tshiromo, Mtondwe and Kasungu. To the north of Lake Nyasa one of Dr. Fülleborn's specimens of Long-claws have been referred to a new species, *M. fülleborni*, Reichen, but the present species is very well represented throughout Central and East Africa, where specimens have been collected by Böhm at Boga-Katana, by Fischer at Lindi, the Rovuma river, Bagamoyo, Lamu, the Tana river, Barawa and Gallaland; by Sir John Kirk at Dar-es-Salam, Zanzibar and the Usambara

country. From Zanzibar to the Upper White Nile specimens have been collected by Emin at Altoni, Mahagi, Mbero, Muggi, Kiri and Wadelai. Dr. Stuhlmann found it near the north-western shores of the Victoria Nyanza at Towalia and Manjonjo, and there is a specimen in the British Museum from the Albert Edward Nyanza, obtained by Mr. Scott Elliot. Heuglin met with four or five pairs, including the type of his *Macronyx striolatus*, all in one place, near the source of the Gazelle river in the Rek country, which is the furthest known range of the species down the Nile valley. Dr. Ansorge collected specimens at Mruli on the Kafu river in Unyoro and at Ntibua in Usogalaland. Mr. Jackson's collection contains examples from Kavirondo, Kampala, Ntebi, and he writes: "Plentiful in the open on the eastern slopes of Mau. Almost invariably in pairs all the year round." On the Mau downs he found them up to an elevation of 8,000 feet; he also procured specimens at Machako's and at Witu. The furthest northern range for this species on the coast of Eastern Africa is Barawa in about 1° N. lat.

Macronyx fuelleborni.

Macronyx fülleborni, Reichen Orn. Monatsb. 1900, p. 39 *Unika*.

Type. Similar to *M. croceus*, but larger; upper parts darker and the under surface of the body browner.

Upper surface similar to that of *M. croceus*, but with the pale edges to the feathers darker; back and scapulars shaded with rufous; rump and upper tail-coverts uniform brown; lores, eyebrow and throat yellow, the latter surrounded by a black gorget; breast and under tail-coverts yellowish brown with the centre of the breast bright yellow; under wing-coverts whitish; tail like that of *M. croceus*. Total length, 8·4 to 8·8 inches; culmen 0·8, wing 4·2 to 4·4, tail 3·2, tarsus 1·5.

Fülleborn's Yellow-breasted Long-claw inhabits the Unika highlands to the north of Lake Nyasa.

Not having seen a specimen of *M. fülleborni*, I can only

remark that its large size appears to me to be the character which most readily distinguishes it from *M. croceus*. The wing is stated to vary from 4·2 inches to 4·4, a difference which is probably sexual; but this wing measurement is quite a quarter of an inch longer than that of any specimen of *M. croceus* I have yet examined.

Macronyx aurantiigula.

Macronyx aurantiigula, Reichen. J. f. O. 1891, p. 222 *Pangani* R.; id. Vög. D. O. Afr. p. 199 (1894); Shelley, B. Afr. I. No. 172 (1896).

Macroynx croceus (nec Vieill.) Fisch. Zeitschr. 1884, p. 308 (fide Reichen. J. f. O. 1892, p. 52).

Type. Similar to *M. croceus*, but with the throat more orange yellow; middle of the abdomen yellowish; remainder of the under surface of the body, the thighs and under tail-coverts pale brown with dusky streaks; eyebrow brownish, with the portion in front of the eye orange; four outer pairs of tail-feathers with white ends to the inner webs. Total length 7·2 inches, wing 3·55, tarsus 1·2.

The Pangani Orange-throated Long-claw inhabits the country to the north of the Pangani river.

The type is recorded as coming from the Pangani, and Dr. Richenow informs us that the *M. croceus* of Fischer from the Maeru mountains and Maurui, belong to this species. I have not seen an authentic specimen; but judging from the original description this bird appears to be very nearly allied to *M. flavicollis*, from which it differs in having some yellow on the abdomen.

Fischer found a nest of this species on the Maeru mountains, July 24. It was placed under a tuft of grass and was constructed of that material. The eggs were of a chalky white thickly streaked with ashy yellowish brown and mottled with scattered rufous brown blotches; 0·9 × 0·65 inch.

Macronyx flavicollis.

Macronyx flavicollis, Rüpp. N. Wirb. Vög. p. 102, pl. 38, fig. 2 (1835) *Abyssinia;* Sharpe, Cat. B. M. x. p. 625 (1885) *Shoa, Abyssinia;* Salvad. Ann. Mus. Genov. 1884, p. 169; 1888, p. 265, Gigl. *t.c.* p. 35 *Shoa;* Hartert, Kat. Vög. Mus. Senck. p. 41 (1891) *Abyssinia*, ♀ *juv.;* Shelley, B. Afr. I. No. 173 (1896); Grant, Ibis, 1900, p. 142; 1901, p. 633 *S. Abyssinia.*

Adult. Similar to *M. capensis*, but differs in being smaller; upper parts more strongly mottled; throat duller orange, not shaded with red; the broad eyebrow yellow in front of the eye and buffy white behind; the black on the sides of the throat more extended and margined on the sides of the neck with a broadish buffy white band; breast, thighs and under tail-coverts brownish buff with scarcely any yellow shade down the centre of the body; sides of the chest and the flanks strongly marked with blackish shaft-stripes; the yellow on the wing with no orange shade; axillaries white. Total length 6·7 inches, culmen 0·6, wing 3·5, tail 2·8, tarsus 1·2. Shoa, ♂, 10. 7. 78 (*Antinori*).

The Abyssinian Long-claw is apparently restricted to the Abyssinian district.

In Gallaland and Shoa, Antinori and Dr. Ragazzi have collected many specimens; but although by no means uncommon it appears, like all the other members of this genus, to have a special predilection for certain spots. Antinori's specimens came from Rugghié in Gallaland and Woddeccia in Shoa, and Dr. Ragazzi's from Antoto and Fallé. Lord Lovat, during the Weld-Blundell expedition from Berbera to the Blue Nile, collected specimens at Jeffi Dunsa and Balti (9° N. lat., 39° E. long.), and writes: "A bird of the high plateaux, often observed to perch on trees"; and according to Mr. A. E. Pease, it has a clear note, uttered when on the wing as well as when settled on trees, and was abundant here in pairs on the higher plateau.

Rüppell, who discovered the type, records the species as abundant in Abyssinia, and Heuglin frequently met with pairs and small parties in the highlands of Semien, Wogara and

Begemeder, between 8,000 and 10,000 feet. According to Dr. Blandford, "It was only seen on the highest parts of the Dalanta plateau and near the crest of the Wandaj pass, and was never observed below 10,000 feet. It was not common, but occurred generally in pairs."

Macronyx ameliæ.

Macronyx ameliæ, de Tarr. Rev. Zool. 1845, p. 452; Heugl. Orn. N. O. Afr. p. 330 (1870); Sharpe, Cat. B. M. x. p. 628 (1885) *Natal;* Shelley, B. Afr. I. No. 174 (1896); Stark, Faun. S. Afr. B. i. p. 240 (1900).

Macronyx wintoni, Sharpe, Ibis, 1891, pp. 444, 589 *Kavirondo;* Neum. J. f. O. 1898, pp. 233, 235; Reichen. Werth. Mittl. Hochl. nord. D. O. Afr. p. 279 (1898) *Manyara lake;* Alexander, Ibis, 1899, p. 563 *Zambesi;* Jackson, *t. c.* p. 630 *Naiwasha.*

Adult. Crown, entire back, upper tail-coverts and scapulars brownish black, with buffy brown sides to the feathers, as in *M. flavicollis;* wings brownish black, the feathers mostly with buffy brown edges, but the outer web of the first primary and the broad edges to many of the smaller wing-coverts pure white, the latter forming a clear broad white band next to the median series of coverts; a few of the least coverts and the bend of the wing rosy red; axillaries and under wing-coverts white, washed with vermilion at the bend of the wing; under surface of the quills dusky ash, with ill-defined pale inner margins; tail brownish black with pale edges to the feathers, and distinct white ends present on the three outer pairs of feathers; sides of head and neck pale rufous brown, slightly whiter on the broad eyebrow and down the sides of the neck adjoining the black gorget; chin and throat uniform carmine red; sides of body, thighs and under tail-coverts buffy brown, strongly marked with black shaft-stripes, shades into bright carmine towards the centre of the breast. Bill grey, shading into dark brown on the tip and culmen; iris brown; tarsi and feet yellowish brown. Total length 7·4 to 8·3 inches, culmen 0·6, wing 3·4 to 3·7, tail 3, tarsus 1·25, middle toe with claw 1·25, hind toe with claw 1·25. Umlaas R. (Gordge). *Type of M. wintoni.* Exactly like the Natal specimens, with the exception of the bill being slightly shorter. Culmen 0·5, wing 3·6.

The Rosy-breasted Long-claw ranges over Eastern Africa from Natal, probably into Abyssinia.

During the month I passed at Durban I never saw this species, nor was it known to my friend, Mr. T. L. Ayres, who

then lived at Pinetown. However, his father, Mr. T. Ayres, remarks: "These beautiful birds are not nearly so common as most other species in Natal; they are to be found along the coast on marshy flats, and are fond of perching on small mounds early in the morning and sunning themselves."

After my return to England Mr. Gordge sent me five specimens from the watershed of the Umlaas river, between Durban and the Tugela, which are now in the British Museum along with one obtained by Mr. Fellowes to the north of the Tugela, where he found the species not uncommon. Messrs. Woodwards saw them at St. Lucia lake in Zululand, and according to Holub, Bradshaw procured a specimen of this species at the Pantamatenka river.

Stark writes: "On the flat and swampy grass lands bordering on the coast of Natal this brilliant coloured Pipit is by no means uncommon, and from its habits of perching on ant-heaps and other slightly elevated spots, where its bright pink throat and chest are easily visible, it is not readily overlooked. Like its congeners, it has a "mewing" call-note, usually uttered as it flies from one perch to another; in spring the male in addition has a short, hurried song, uttered as it hovers for a few seconds in the air. This Pipit feeds on grass- and other small seeds, to a larger extent on various insects, small grasshoppers, young locusts, beetles and termites. A nest containing four eggs, found near Durban in November, was built in a hollow at the foot of an ant-hill. It was deeply cup-shaped, constructed of grass stems, lined with finer grass and a few horsehairs. The eggs resemble those of *M. capensis* and *M. croceus*, but are somewhat smaller, averaging 0·95 × 0·70.

I fail to see any character for separating *M. wintoni* from *M. ameliæ*. At Chicowa, on the Zambesi, Captain Boyd Alexander obtained an immature specimen in long grass,

which he compares with the type of *M. wintoni* (Ibis, 1899, p. 563). The latter was shot by Mr. Jackson in Kavirondo, October 22, 1889, and Dr. Sharpe writes: "This is an interesting discovery of Mr. Jackson's, considered along with the appearance of *Chera procne* and *Pyromelana taha* in Central East Africa. In the case of the two last-named birds I was unable to find any specific differences from South African examples, but the present bird is quite recognisable from *M. ameliæ* by its smaller size and much smaller bill." Mr. Jackson also procured a specimen near Naiwasha lake, August 6, 1897. In this country to the east of the Victoria Nyanza between Manyara lake and Kavirondo, Mr. Neumann appears to have found the species fairly abundant, and it probably ranges northward into Southern Abyssinia, for Heuglin mentions a specimen of *M. ameliæ* in the collection of Prince Paul, of Würtemberg.

Family VIII. ALAUDIDÆ.

The Larks differ from all the other *Oscines* in having the back of the tarsus scaled.

Bill variable and often somewhat Finch-like. Nostrils hidden by bristly plumes or exposed. Wing generally with ten primaries, unless the bastard-primary, which is very variable in size, is entirely absent, as in *Ca'andrella;* longest secondary generally reaches nearly or quite to the tip of the wing, but in *Otocorys*, *Rhamphocorys* and *Melanocorypha* it falls short by at least the length of the tarsus. Tarsi fairly long; hind claw very variable, never strongly curved, but sometimes abnormally long and straight. Plumage generally mottled, consisting of white, brown, rufous and black, rarely with any yellow and never with any other bright colours, and is well adapted for protection in the open country these birds frequent.

Nest, cup-shaped, constructed of dry grass, placed on the ground in a slight depression and generally hidden beneath a tuft of grass. The number of eggs in a nest varies from two to five; they have a characteristic colouration, being whitish freckled with brown, which latter colour generally forms a somewhat distinct zone towards the larger ends.

In 1896, when I published my list of the birds of the Ethiopian Region,

I followed the arrangement of the Larks proposed by Dr. Bowdler Sharpe (Cat. B. M. xiii.); but on working out the "keys" to the genera and species, I have somewhat altered my views. *Alæmon* and *Heterocorys* are not, I think, worth separating from *Certhilauda*, and I find no characters for distinguishing *Spilocorydon* from *Mirafra* or *Spizocorys* from *Calandrella*.

The *Alaudidæ* I divide into two sections: those with ten primaries and those with only nine. This character readily distinguishes the *Calandrella* group from *Alauda*. By disregarding the character of an abnormally long hind claw for *Alauda*, that genus would include not only *A. arvensis* and its sub-species, but also *Spilocorys personata*, Sharpe; otherwise a new genus would be required for the reception of this one species, which I consider it would be folly to propose.

In my key to the genera I have entered the names of all that I can recognise and have placed, between brackets, those which have not been met with in the Ethiopian Region.

The genus *Certhilauda* runs very closely into *Mirafra* through the typical *Certhilauda capensis* and *Certhilauda nivosa*, Swains.; which latter is a true *Mirafra*.

I have restricted the genus *Mirafra* to birds in which the sexes are similar in plumage and the upper parts always mottled. I therefore propose the new generic name *Pinarocorys* for the reception of *Alauda nigricans*, Sundev., and *Alauda erythrophygia*, Strickl., in which the coloured pattern of the wings is very dissimilar in the males and females, and the crown and back uniform in old birds.

I place *Pyrrhulauda* next, as it is the only other genus of the *Alaudidæ* in which the sexes differ in the colouring and pattern of the plumage.

The very remarkable genus *Rhamphocorys* may follow and be succeeded by *Ammomanes*, leaving a number of nearly allied genera, all with the backs mottled, to end the section of Larks which have ten primaries. These include *Botha*, gen. nov., *Lullula*, *Galerita*, *Heliocorys* and *Calendula*, which constitute the *Galerita* group, and *Alauda*, *Pseudalæmon* and *Melanocorypha* belonging to the *Alauda* group.

Among the specimens examined I have found an immature bird which I cannot locate in any known genus, so make it the type of *Botha*, a new generic name. In the structure of the wings, tarsi, feet and hind claws it agrees well with *Galerita*, but the bill is very different and also the pattern of the tail. *Lullula*, *Galerita*, *Heliocorys* and *Calendula* are scarcely distinguishable genera. *Calendula* in its almost obsolete crest approaches in this respect to *Alauda*.

I now come to the section of Larks characterised by having no bastard primary, including *Alaudula*, *Calandrella* and *Tephrocorys*, extremely near allies, and finish with the well-marked genus *Otocorys*.

KEY TO THE GENERA.

a. Wing of ten primaries, the first a bastard primary.
  a^1. Bill long and slender, culmen longer than the middle toe with claw.
    a^2. Bastard-primary small, shorter than culmen . . . . . (Chersophilus).
    b^2. Bastard-primary large, longer than culmen . . . . . Certhilauda.
  b^1. Bill not abnormally long and slender.
    c^2. Nostrils exposed.
      a^3. Shortest secondary falls short of tip of wing by less than the length of the tarsus; mantle always mottled; amount of rufous and the pattern of the wing never varies in adult birds. Mirafra.
      b^3. Shortest secondary falls short of tip of wing by the length of the tarsus; crown and mantle in adults uniform; amount of rufous and pattern of wing varies in adult birds . . . . Pinarocorys.
    d^2. Nostrils hidden by plumelets.
      c^3. Sexes extremely dissimilar in colouring; adult males with the ear-coverts uniform white or black; females brown and white with the under wing-coverts black. . . . . Pyrrhulauda.
      d^3. Sexes alike in plumage.
        a^4. Upper parts uniform, sandy or ashy.
          a^5. Bill extremely thick, with the cutting edge of the upper mandible festooned. . . . . (Rhamphocorys).
          b^5. Bill moderate, cutting edges of bill normal and not festooned. . Ammomanes.
        b^4. Upper parts mottled with dark centres to the feathers.
          c^5. Bastard primary larger, not shorter than the culmen; hind claw longer than the hind toe and very slightly curved.
            a^6. Culmen straight; bill very Finch-like . . . . . Botha.

b^6. Culmen curved; bill not Finch-like.
a^7. Crown more crested; bill slighter.
a^8. Patches of white on the wings and on the ends of the five outer pairs of tail feathers. . . . . (Lullula).
b^8. No white on wings, pale pattern of tail confined to the two outer pairs of features.
a^9. Crest longer . . . . Galerita.
b^9. Crest shorter . . . . Heliocorys.
b^7. Crown less crested; bill rather stout . . . . . Calendula.
d^5 Bastard primary small, shorter than the culmen.
c^6. Secondaries reaching nearly or quite to the tip of the wing.
c^7. Bill moderate, culmen shorter than middle toe with claw . Alauda.
d^7. Bill stout, culmen longer than middle toe with claw . Pseudalæmon.
d^6. Secondaries falling short of tip of wing by length of tarsus . . Melanocorypha.
b. Wing of nine primaries only, the bastard primary being absent.
c^1. No elongated black hornlets on sides of head; secondaries not falling short of tip of wing by so much as the length of the tarsus.
e^2. Secondaries reaching nearly or quite to tip of wing.
e^3. Crown mostly bright chestnut in adults . . . . . Tephrocorys.
f^3. No bright chestnut on the crown . . Calandrella.
f^2. Secondaries falling short of tip of wing by more than half the length of the tarsus. Alaudula.
d^1. Adults with black hornlets on sides of head; secondaries falling short of tip of wing by more than length of tarsus . . Otocorys.

Genus I. CERTHILAUDA.

Bill long and slender; culmen longer than the middle toe with claw; nostrils exposed. Wing of ten primaries, the first a bastard-primary more than one inch in length; second primary shorter than the fifth. Tarsi and feet pale.

	Type.
Certhilauda, Swains. Zool. Journ. iii. p. 344 (1827)	C. capensis.
Alæmon, Keys. and Blas. Wirb. Eur. p. xxxvi. (1840)	C. alaudipes.
Chersomanes, Cab. Mus. Hein. i. p. 126 (1850)	C. albofasciata.
Heterocorys, Sharpe, P. Z. S. 1874, p. 625 .	C. breviunguis.

The genus *Certhilauda*, as I have here defined it, includes five species, all natives of the Ethiopian Region, and one only, *C. alaudipes*, ranges into North Africa and Asia, for I do not admit *Alauda desertorum*, Stanley, to be distinct from *Upupa alaudipes*, Desf.

The character of the long and slender bill excludes *Certhilauda nivosa*, Swains., which is a species of *Mirafra*, belonging to the same group as *M. sabota*, and the genus *Chersophilus*, Sharpe, C. B. M. xiii. p. 526 is excluded by its small bastard-primary.

KEY TO THE SPECIES.

a. Mantle uniform; secondaries, with the exception of the inner ones, white crossed by a broad blackish bar	*alaudipes*.
b. Mantle mottled; no white on the wing.	
a^1. Tail short, with broad white ends to all but the centre pair of feathers	*albofasciata*.
b^1. Tail longer; no white ends to the feathers.	
a^2. Abdomen and flanks uniform.	
a^3. Dark centres to feathers of crown and mantle narrow	*semitorquata*.
b^3 Dark centres to feathers of crown and mantle broad	*breviunguis*.
b^2. Breast and flanks strongly streaked . .	*capensis*.

Certhilauda alaudipes.

Upupa alaudipes, Desf. Mém. Acad. 1787, p. 504.
Certhilauda alaudipes, Hartert, Kat. Vög. Mus. Senck, p. 38 (1891) *Kordofan;* Koenig, J. f. O. 1896, p. 216, pl. 7, figs. 5a, 5b, *eggs.*
Alæmon alaudipes, Sharpe, Cat. B. M. xiii. p. 518 (1890) *Cape Verde Is.;* Shelley, B. Afr. I. No. 178 (1896); Alexander, Ibis, 1898, pp. 112, 116, 281; Bocage, Jorn. Lisb. 1898, p. 146; Salvad. Ann. Mus. Genov. 1899, p. 294 *Cape Verde Is.;* L. Phillips, Ibis, 1898, p. 400 *Somali;* Nehrkorn, Kat. Eiers, p. 132 (1899) *egg.*
Alauda desertorum, Stanley, in Salt's Exped. Abyss. App. p. lx. (1814).
Alæmon desertorum, Sharpe, Cat. B. M. xiii. p. 519 (1890) *Abyssinia, Sind,* Shelley, B. Afr. I. No. 179 (1896); Hawker, Ibis, 1899, p. 65 *Somali;* Nehrkorn, Kat. Eiers, p. 132 (1899) *egg;* Grant, Ibis, 1901, p. 287 *Zeila;* p. 626 *Somali.*
Alauda bifasciata, Licht. Verz. Double p. 27 (1823) *Nubia.*
Certhilauda meridionalis, A. E. Brehm. J. f. O. 1854, p. 77 note, *Dongola.*
Certhilauda salvini, Tristram, Ibis, 1859, p. 57 *Algeria.*
Certhilauda doriæ, Salvad. Att. R. Ac. Torin. iii. p. 292 (1867).
Certhilauda jessei, Finsch, Trans. L. S. vii. p. 273 (1870) *Annesley Bay.*

Adult male. Upper parts uniform sandy buff with a slight tinge of grey on the head, neck and upper tail-coverts; crown and upper back with nearly obsolete brown shaft stripes; lesser wing-coverts sandy buff; inner greater coverts and inner secondaries sandy buff with ashy brown centres; remainder of the wing dark brown with the following portions white—edges of the median coverts, broad ends to the greater coverts, broad outer margins to the secondaries, a broad band across the base and another at the ends of the secondaries, the former extending across the primaries with the exception of the outer webs of the first four quills, and the latter extends on to the four inner primaries only; tail square, with the extreme base white and the remainder blackish brown, fading into grey on the centre feathers which are broadly edged with sandy buff, the outer tail-feather on each side has nearly the whole of the outer web white; eyebrow and side of head white with a patch on the lower cheek, and upper ear-coverts black; under parts white with a faint ashy shade on the crop, the latter boldly spotted with brownish black centres to the feathers; under surface of the wings white with a large blackish brown portion of the quills narrowing into a bar across the secondaries. "Iris dark brown, bill grey, legs white." Total length in the flesh 9·1 inches, culmen 1·05, wing 5·0, tail 2·7, tarsus 1·4. ♂, 15. 1. 97. Berbera (Lort Phillips).

Adult female. Differs from the male in being much smaller and of a slightly more sandy colour, the grey shade being almost entirely absent. Total length in the flesh 8 inches, culmen 0·95, wing 4·2, tail 3·2, tarsus 1·2, ♀, 15. 1. 97. Berbera (Lort Phillips).

The Great Long-billed Lark ranges over the desert portions of North Africa into the Cape Verde Islands, Somaliland and the coastlands of Southern Asia to as far east as Sind.

The most western range known for this species is Boavista, the nearest island of the Cape Verde group to the African continent and it has not been recorded from any other of these islands. It is evidently a very common species here, and a resident according to Mr. Boyd Alexander, who writes: "This species frequents the sandy portion of the island near the sea. Throughout the day we found it either singly or in pairs, but as a rule, the males kept to themselves, while each female was invariably accompanied by a single immature bird." He also writes: "The eggs, two in number, are laid on the bare ground, in a depression, underneath a stone, or among the ruins of a wall. Their ground colour is dirty white, blotched and spotted with reddish brown, with underlying markings of purplish grey, which often form a thick zone round the larger end. Measurements: length 1·0 to 0·9 inch; breadth 0·7 to 0·63 inch. Incubation is performed by the female, and while she sits the male bird will decoy with antics the intruder right into the opposite direction to where the nest is situated." He found them breeding in September and obtained twelve specimens and remarked that locusts formed their chief food, and further writes: "*Alæmon alaudipes* will sometimes perch on trees, while its manner on the ground is very Thrush-like. It runs in front of its pursuer, with head bent low, now and again stopping and then raising its head as if to listen. Its flight is slow and clumsy, and rather Jay-like in action, while the broad white bars on the wings are very conspicuous as the bird travels forward, only to alight, however, a few yards ahead of the spectator. Towards sundown individuals come together from far and near and resort to a favourite spot for an evening

meal. The love-call of the male during the breeding-season has the ring of a clarion in it, and can be heard at a great distance. At this call, uttered three or four times in rapid succession, the female comes to his side, and he then shoots up into the air above her head uttering the whole time his note, which becomes tremulous as the flight upward is completed, and then he drops down again with a float-like motion of the wings almost upon the head of his consort."

The most southern locality known to me for this species is the Berbera plains of Somaliland, where my friends, Mr. Lort Phillips and Mr. Hawker, collected specimens in January and February. The former naturalist writes : "These strange Desert-birds were very plentiful on the Berbera Plain in January, and as they were invariably met with in pairs, they may have been breeding. Their colouring so exactly matches that of the sand and stones among which they live, that they might easily escape observation altogether, were it not for the long-drawn melodious note frequently uttered. When followed they run with the greatest swiftness, instead of taking to flight." Mr. Hawker found these birds generally on the salt-flats near the sea shore, where Mr. A. E. Pease considers them to be common and saw them feeding there by moonlight.

The species frequents the most desert portions of the land on each side of the Red Sea. From Zoulla in Abyssinia, there are six specimens in the British Museum, including the type of *Alæmon jessei*, Finsch. The specimens in Rüppell's collection came from Kordofan, Dongola and Arabia. Heuglin generally met with these Larks in pairs along the caravan routes, and likens their short weak flight to that of the Hoopoe, but when on the ground running they resembled the Cream-coloured Courser, which latter bird it strongly reminded me of when I saw it in Egypt hurrying along the ground without stopping, till I lost sight of it in the distance on the desert sand.

The species is divided by Dr. Bowdler Sharpe (Cat. B. M. xiii.) into two subspecies: a pale form *Alæmon alaudipes*, p. 518, and a darker one, *A. desertorum*, p. 519. These are both well figured by Mr. Dresser, B. Eur. iv. pl. 226, under the name of *Certhilauda desertorum*.

Specimens from the Cape Verde Islands and from Somaliland in the British Museum agree perfectly in their shade of colouring, and therefore as the former is not always paler than those from tropical North-east Africa I see no justification for cutting up this species.

It appears to me that the species, although it has a fairly wide range, is essentially local. That is to say, any members having selected an isolated barren spot, as is their custom, never willingly leave it, and consequently breed in and in for generations; if in doing so they are establishing new subspecies is a question.

Certhilauda albofasciata.

Certhilauda albofasciata, Lafr. Mag. Zool. 1836, Ois. p. 3, pl. 58, *S. Afr.*
Certhilauda garrula, Smith, Ill. Zool. S. Afr. Aves, pl. 106, fig. 1 (1846) *Cape Col.*; Chapman, Trav. S. Afr. ii. p. 400 (1868) *Gt. Namaqua*; Hartert, Kat. Vög. Mus. Senck. p. 37 (1891) *S. Afr.*
Certhilauda rufula (nec Vieill.) Butler, Feilden and Reid, Zool 1882, p. 302 *Natal*; Sharpe, Cat. B. M. xiii. p. 515 (1890) *Gt. Namaqua, Cape Col., Natal, Transvaal*; Fleck, J. f. O. 1894, p. 411 *Kalahari*; Kuschel, J. f. O. 1895, p. 344 *egg*; Shelley, B. Afr. I. No. 177 (1896); Nehrkorn, Kat. Eiers. p. 132 (1899) *egg*; Stark, Faun. S. Afr. B. i. p. 234 (1900).

Adult male. Upper parts rufous shaded brown, slightly paler on the hind neck and passing into bright rufous on the tail-coverts and with rather narrow blackish shaft-stripes on the feathers of the crown and back, the latter somewhat mottled with broad buff terminal edges to the feathers, more marked in younger birds; wings brown, the feathers with pale edges, broadest on the coverts and secondaries, which latter have dark submarginal lines next to the buff edges; tail short and rounded, blackish, with very broad rufous edges to the centre pair of feathers and large patches of white

at the ends of all the others; sides of the head rufous with the cheeks and an indistinct broad eyebrow paler; under surface of the body pale cinnamon, somewhat mottled with buff and fading into white on the throat; a few blackish shaft-stripes on the lower throat and crop; under surface of the wings brown; with the under wing-coverts pale cinnamon and partial buff inner margins to the quills. "Iris light ashy brown; bill dusky, with the lower mandible paler and more ashy; tarsi and feet pale ashy brown" (T. Ayres). Total length 6·2 inches, culmen 0·8, wing 3·5, tail 2·0; tarsus 1·0. Hope Town (Atmore).

Immature. Slightly darker than the adult; crown and mantle spotted with white, the ends of the feathers being broadly edged with white with a partial black subterminal bar; chest and flank with blackish brown spots. ♂, juv. 7. 5. 78. Potchefstroom (T. Ayres).

The Rufous Long-billed Lark inhabits South Africa, south of about 20° S. lat.

Mr. Fleck found the species in the Kalahari. Chapman and Andersson do not appear to have met with it further north than Great Namaqualand, for although Dr. Bowdler Sharpe in 1874 refers to two specimens then in his collection, as labelled "Damaraland (Andersson)," Andersson writes: "I have not observed this species in Damaraland, but it is common in some parts of Great Namaqualand, frequenting very open localities covered with grass and bush, where it runs about with great swiftness." In the northern portion of Cape Colony the late Sir Andrew Smith obtained the type of his *Certhilauda garrula*, a rather dark specimen, which is now in the British Museum along with others from Great Namaqua, Hope Town, Colesberg and Port Elizabeth.

To the eastward of Cape Colony, Messrs. Butler, Feilden and Reid record the species as being: "Extremely abundant about Newcastle, found in small flocks on the open veldt, generally where there are ant-hills or loose rocks among the grass. Flies low and rapidly, displaying its white-tipped tail very conspicuously, and dropping with astonishing suddenness into the grass. Nest very small indeed, placed under a slight

projecting lump of earth or bit of coarse stunted grass. Eggs three, very variable in colouring, the ground colour being white, more or less distinctly speckled and blotched with brownish ash or brown. They measure 0·7 × 0·5 inch. In some the markings are fine, in others they take the form of large obscure blotches."

In the Transvaal Mr. T. Ayres found these Larks in the open country in small companies, rising abruptly and as abruptly settling down again in the grass; and when on the wing they constantly uttered a low chirping note. He found a nest of this Lark at Mamusa, some little distance from the river; it was placed under a tuft of grass and was composed of rough grass outwardly, lined with roots of fine grass, and partially arched over with the rough grass of which the outer portion of the nest was constructed; it contained two eggs, one of which was larger than the other.

With regard to its habits, the late Dr. Stark writes: "Like the other Long-billed Larks, this species keeps much to the ground in rather open stony localities. Here it runs with great swiftness, and endeavours to escape detection by suddenly stopping and crouching on the ground in spots that assimilate in colour with the plumage, and this manœuvre is frequently successful. The flight of this Lark is undulating; its note is a clear and prolonged whistle." The specimens I have seen from Great Namaqualand are very much paler and of a more sandy shade than those from Natal and the Transvaal, while examples of an intermediate colouring come from Cape Colony; and I agree with Dr. Sharpe's opinion that "the difference in depth of colouration probably depends upon the habitat of the birds themselves and the nature of the country they frequent."

Certhilauda semitorquata.

Certhilauda semitorquata, Smith, Rep. Exped. C. Afr. p. 47 (1836) *E. Cape Col.*; Chapm. Trav. S. Afr. ii. p. 400 (1868) *Gt. Namaqua.*

Alæmon semitorquata, Butler, Fielden and Reid, Zool. 1882, p. 302, *Natal;* Sharpe, Cat. B. M. xiii. p. 521 (1890) *Benguela, Damara, Cape Col., Natal, Transvaal;* Kuschel, J. f. O. 1895, p. 344 *egg;* Shelley, B. Afr. I. No. 180 (1896); Nehrkorn, Kat. Eiers. p. 132 (1899) *egg;* Stark, Faun. S. Afr. B. i. p. 228 (1900).

Certhilauda rufopalliata, Lafr. Mag. Zool. 1836, Ois. p. 4, pl. 59.

Certhilauda subcoronata, Smith, Ill. Zool. S. Afr. Aves. pl. 90, fig. 2 *Cape Col.*

Certhilauda coronata (laps. cal. pro *subcoronata*) Layard, Ibis, 1869, p. 371.

Adult male. Above bright cinnamon, slightly paler on the hind neck, and with narrow blackish shaft-stripes to the feathers of the crown, neck, and mantle. Wing brown, with pale cinnamon edges to the feathers, which are narrow on the primary coverts and primaries and broad on the other feathers, increasing in breadth towards the inner secondaries, which are mostly rufous. Tail brown with rufous edges to all the feathers. Eyebrows and cheeks rufous buff; ear-coverts uniform cinnamon; under parts sandy buff washed with cinnamon on the crop and sides of the body; crop strongly spotted with angular blackish shaft-marks; under wing-coverts rufous buff; quills brown with narrow buff inner edges. "Iris brown; bill dark brown with the base of the lower mandible flesh colour; legs brownish flesh colour" (S. Reid). Total length 8·4 inches, culmen 0·9, wing 4·2, tail 3·25, tarsus 1·0. ♂, 10. 6. 81. Newcastle (E. A. Butler).

Adult female. Very similar to the male but smaller. Total length 6·6 inches, culmen 0·7, wing 3·7, tail 2·8, tarsus 1·1. ♀, 1. 6. 81. Newcastle (E. A. Butler).

In a specimen labelled "♂, 22. 10. 78, Potchefstroom (T. Ayres)," the dark shaft-stripes are almost absent.

Specimens labelled "30. 5. 66, Otjimbinque (Andersson)," are very much paler, the general tone of colouring of the upper parts is pale sandy shaded cinnamon; eyebrows, cheeks, and under surface white with only an obsolete tinge of buff on the top.

A speciman labelled "Benguela (*Monteiro*)" is very similar to the Damara specimens, but is duller brown above, with scarcely any rufous shade. Those from Cape Colony have the upper parts dark like the Natal and Transvaal birds, and the eyebrow and under parts white like the Damara and Benguela specimens, and show a good connecting link between the extreme forms.

The Grey-collared Long-billed Lark inhabits South Africa, south of the Quanza and Limpopo rivers.

The most northern range recorded for this species is Benguela, from whence there is a specimen in the British Museum obtained by Monteiro, who writes: "Very abundant about Benguela, particularly in bare rocky places. Keeps always on the ground, and is very tame, as it may be passed quite close without its flying away or otherwise showing alarm." Referring to the above remark, Professor Barboza du Bocage observes (Orn. Angola, p. 377): "We have never received this species from Benguela, nor elsewhere."

To the south of the Cunene river, the species has not been recorded by Mr. Fleck from German South-west Africa; but according to Andersson: "These Larks are not uncommon in the middle and southern parts of Great Namaqualand: and I have also observed a considerable number of them together, between Wilson's Fountain and Tjobis, in Damaraland." Chapman writes: "First observed in Great Namaqualand, where in some localities it is not unfrequent." Sir Andrew Smith, when he described the type of the species, wrote as follows: "Inhabits the eastern province of the colony and the country immediately above the Orange river." Later, when he came to figure the species under the name of *Certhilauda subcoronata*, he apparently forgot his previous notice of this species and writes: "The few specimens of this species which have come under my observation were procured from the arid *Karroo* plains of the middle and eastern districts of the Cape Colony." Mr. Layard found the species near Grahamstown and procured others from Traka in the Albert division, and a nest and eggs from Mr. Artlepp. "Eggs sent by the latter gentlemen are of clear, pale, cream coloured ground, spotted throughout with red, brown and purple, rather inclining to form a ring near the thick end. The nest is a cup-shaped structure of dry grasses placed in a

tuft of grass on the ground. It feeds on insects and small grass seeds, and inhabits flats and mountain slopes—soars frequently. Notes: a loud but plaintive whistle, somewhat resembling ē-ŭ."

In Natal, according to Messrs. Butler, Feilden and Reid, it is "a very abundant species on the rocky 'kopjes.' The male has a curious way of rising suddenly and silently from its perch on a rock, in a nearly perpendicular direction, for a height of twenty or thirty feet. Just at the summit of its flight it gives a long-drawn whistle 'phe-e-ew,' not unlike that of the Clapper Lark; then, with wings nearly closed, descends in a slanting direction to another neighbouring rock to repeat the manœuvre in a few minutes' time. Reid shot one in the very middle of this singular performance, so there is no question as to correct identification of the bird; moreover, *Mirafra apiata* is not found near Newcastle, and there is no cracking of the wings as with that well-known species. The male bird is considerably larger than the female, and has the iris greyish brown; in the female it is brown." Mr. T. E Buckley shot a specimen in the Transvaal in June, and writes: "Not very common, I fancy. This was the only specimen I obtained; and I observed only one or two more." The late Mr. Frank Oates also obtained a specimen here in December of the same year. The late Dr. Stark informs us that he never met with more than a pair together; "their ordinary call-note is a clear and prolonged whistle, they also indulge occasionally in a short but cheerful song. Towards the end of August or beginning of September, they proceed to nest. A slight cavity scratched in the ground under cover of a tuft of grass is lined with fine dry grass, and in it three eggs are laid about the end of September. These are cream coloured, spotted all over, but more thickly in a ring round the widest part of the egg, with reddish and purplish brown. They average 0·90 × 0·65."

Certhilauda breviunguis.

Alauda breviunguis, Sundev. Afr. K. Vet. Ak. Förh. Stockh. 1850, p. 99 *Transvaal.*

Heterocorys breviunguis, Sharpe, Cat. B. M. xiii. p. 524 (1890) *Cape Col., Transvaal;* Shelley, B. Afr. I. No. 182 (1896); Stark, Faun. S. Afr. B. i. p. 227 (1900).

Adult male. Above pale rufous brown with black shaft-bands, very broad on the crown and mantle; wings dark brown with buff edges to the feathers, broadest on the wing-coverts and secondaries, and more shaded with rufous than on the primary-coverts and primaries; tail dark ashy shaded brown with rufous buff edges to all the feathers; ear-coverts brown, eyebrows, cheeks and under parts sandy buff, slightly darker on the crop and flanks; crop strongly spotted with brownish black angular shaft-marks; under surface of the wing ashy brown with the coverts mostly sandy buff, and a faint buffy shade extends along the inner margins of the quills. Total length 6·8 inches, culmen 0·75, wing 3·9, tail 3·1, tarsus 1·1. ♂, 16. 4. 44. East of Inhambane (Wahlberg).

The Short-clawed Long-billed Lark inhabits Cape Colony and the Transvaal.

There has been no further information regarding this Lark since 1884, when Dr. Bowdler Sharpe wrote: "This species seems to be very rare, as we have never seen a specimen in any recent collection. Sir Andrew Smith procured two individuals, which are now in the British Museum; but he does not appear to have named the species. The late Professor Wahlberg obtained it in the Transvaal." There are still only three specimens in the British Museum.

Certhilauda capensis.

Alauda capensis, Bodd. Tabl. Pl. Eul. p. 45 (1783).

Certhilauda capensis, Sharpe, Cat. B. M. xiii. p. 514 (1890) *Cape Col.;* Kuschel. J. f. O. 1895, p. 344 *egg;* Shelley, B. Afr. I. No. 176 (1896); Stark, Faun. S. Afr. i. p. 233 (1900).

Alauda africana, Gm. S. N. i. p. 798 (1788) *Cape.*

Adult. Above, rufous tinted brown, slightly paler on the hind neck, with broad blackish shaft-stripes and some whitish tips to the feathers; wings

brown with pale edges to the feathers; tail square and entirely brown with paler edges to the feathers; sides of head brown mottled with buff, and a broad buff eyebrow extending from the nostril to the nape. Under parts buffy white with dark brown shaft-stripes to the feathers, excepting to those of the chin, centre of abdomen, thighs and centre of under tail-coverts. "Iris dark brown; bill yellowish brown; legs and toes clear buffy orange tinted with flesh red; claws yellowish brown" (Sir A. Smith). Total length 8·1 inches, culmen 1·1, wing 4·1, tail 2·9, tarsus 1·25. Natal (Seebohm Coll.).

The Cape Long-billed Lark inhabits Cape Colony and Natal. According to the late Sir Andrew Smith, "Specimens of this species abound in the immediate vicinity of Cape Town, and are partial to localities whose soil is loose and sandy. They seek their food among the brushwood with which the parts they inhabit are generally more or less covered; and when not so occupied, are fond of resting upon small hillocks or even upon the tops of shrubs." Layard writes: "The chief distinguishing character of the present species is the absence of white tips to the tail-feathers. It is common in most parts of the colony, as we have received it from all our correspondents. It frequents the sandy Cape Flats, the corn-lands of Malmesbury, the uplands of Caledon, and the grassy plateaux of the Knysna. It never congregates in flocks, rarely more than two being found within a certain range. Its food consists of insects and seeds. It constructs a cup-shaped nest of hair and grasses, lined with feathers, under the shelter of a bush or stone; the eggs, generally three in number, are dirty white, faintly and minutely specked with light brown: axis 0·9, diameter 0·75 inch. Some specimens run much darker than others. Mr. Gurney records a specimen from Natal in one of Mr. Ayres' early collections from that colony, but we have never seen a specimen from that country." In the British Museum there is a specimen from Natal.

According to Stark, this species is more abundant on the Cape Flats and in the western districts of Cape Colony than

elsewhere. He met with them almost invariably in pairs and never saw them assemble in a flock. They, not unfrequently, perched on the tops of bushes, and their note was loud, prolonged, and a clear whistle. He further remarks that they breed in the neighbourhood of Cape Town in September and October.

Genus II. MIRAFRA.

Sexes alike in plumage; crown and back always mottled. Bill moderately strong; culmen shorter than the middle toe with claw; nostrils exposed. Wing rounded, none of the secondaries fall short of the tip of the wing by nearly so much as the length of the tarsus, and the longest ones reach about to the end of the wing; bastard-primary well developed, extending beyond the primary coverts and middle of the wing; second primary not longer than the fifth. Tarsi, feet and claws moderate and brown or flesh-colour.

	Type.
Mirafra, Horsf. Tr. Linn. Soc. xiii. p. 159 (1820)	M. javanica.
Corypha, Gray, List Gen. B. 1840, p. 48 . .	M. apiata.
Megalophonus, Gray, List Gen. B. 1841, p. 62	M. apiata.
Plocealauda, Hodgs. in Gray's Zool. Misc. 1844, p. 84	M. assamica.
Geocoraphus, Cab. Arch. Nat. xiii. p. 328 (1847)	M. javanica.
Calendulauda, Blyth, J. A. S. Beng. xxiv. p. 258 (1855)	M. nivosa.
Spilocorydon, Reichen. Orn. Centralb. 1879, p. 155	M. hypermetra.

To this genus belong nearly half the known species of Larks. It is confined to the tropical portion of the Old World and South Africa, ranging eastward to the Philippines, Borneo, Flores and Java. Of the thirty-seven species known to me twenty-six are confined to Africa; one, *M. cantillans*, ranges from N.E. Africa into India; nine are confined to S. Asia and the islands above mentioned, and one is restricted to Madagascar.

KEY TO THE SPECIES.

a. No black collar across the middle throat.
  a^1. No rufous on primaries. Subgenus *Calendulauda*.
    a^2. Under wing-coverts dusky, sometimes mottled with buff.
      a^3. Flanks streaked.
        a^4. Crop-markings brownish black (Cape district) . . . . . *nivosa*.
        b^4. Crop-markings brownish cinnamon (Somali district) . . . . . *gilletti*.
      b^3. Flanks uniform.
        c^4. Bill smaller; upper parts darker and more rufous (S. Afr.) . . . . . *sabota*.
        d^4. Bill larger.
          a^5. Upper parts paler and more sandy (S. Afr.) . . . . . *nævia*.
          b^5. Upper parts greyer with no rufous nor sandy colouring (Loango) . *plebeia*.
    b^2. Under wing-coverts and crop-markings cinnamon (E. Afr.) . . . . . *pæcilosterna*.
  b^1. Some rufous on the primaries.
    c^2. With bars on the upper tail-coverts and generally on some or many of the other feathers; wing less than 3·5 inches. Subgenus *Corypha*.
      c^3. Pale pattern on outer tail-feathers buff; adults with no rufous on the inner webs of the quills . . . . . *apiata*
      d^3. Pale pattern on outer tail-feather rufous.
        e^4. Rufous on primaries never entirely cross both webs.
          c^5. Upper parts less rufous and very strongly barred . . . . . *fischeri*.
          d^5. Upper parts more rufous and scarcely barred . . . . . *rufocinnamomea*.
        f^4. Rufous on primaries entirely crosses both webs . . . . . *rufipilea*.
    d^2. No bars on upper parts unless the wing is more than 3·5 inches.

e^3. Large; wing 3·7 to 4·4; rufous on primaries entirely crosses both webs and extends over quite two-thirds of these feathers. Subgenus *Spilocorydon*.

g^4. Larger; wing 4 inches or more; tail an inch ~~longer~~, about 3·5.

e^5. Less rufous; outermost web of tail narrowly margined with buff . . *hypermetra.*

f^5. More rufous; outermost web of tail entirely buff . . . . . *sharpei.*

h^4. Smaller; wing about 3·8; tail an inch shorter, about 2·5.

g^5. Plumage more buff; scarcely any red on crown; dark centres to feathers, widened at the ends . . *athi.*

h^5. Plumage less buff; a considerable amount of red on crown; dark centres to feathers more pointed at the ends . . . . . *africana.*

f^3. Smaller; wing not more than 3·5. Subgenus *Mirafra*.

i^4. Rufous on primaries entirely crosses a portion of both webs of some of the feathers.

i^5. Rufous on primaries extends over the entire basal half of the inner webs.

a^6. Above pale cinnamon; wings of the same colour with a brownish shade towards the ends of the primaries . . . . . *cordofanicus.*

b^6. Above brownish ash with narrow black shaft-stripes . . . *damarensis.*

k^5. Rufous of inner webs of primaries only cross the extreme base.

c^6. Above more uniform rufous with the dark shaft-stripes narrow.

a^7. Paler above . . . . . *africanoides.*

b^7. Darker above . . . . . *alopex.*

d^6. Above less rufous and with broad dark centres to the feathers . . . . . *intercedens.*

k^4. Rufous of primaries never crosses the inner webs and very seldom the outer webs.

l^5. Upper tail-coverts like the mantle in colour.

e^6. Tail with the shafts of penultimate feathers dark, and the white pattern smaller.

c^7. Hind claw abnormally long . *hova.*

d^7. Hind claw not abnormally long.

a^8. Darker and larger; wing 3·3 . . . . . *fringillaris.*

b^8. Paler and smaller; wing 3·0 . . . . . *cantillans.*

f^6. Tail with shafts of penultimate feathers white, and the white pattern larger.

e^7. Above mottled with rufous brown edges to the feathers. *chiniana.*

f^7. Above mottled with grey edges to the feathers . . . *albicauda.*

m^5. Upper tail-coverts unlike the mantle in colour.

g^6. Upper tail-coverts and sides of centre tail-feathers cinnamon; pale pattern of tail rufous . . *buckleyi.*

h^6. Upper tail-coverts ashy.

g^7. Centre tail-feathers with broad cinnamon edges; pale pattern of tail white . . . *angolensis.*

h^7. Rump and sides of centre tail-feathers ashy grey; pale pattern of tail yellowish brown . . . . . *nigrescens.*

b. A black collar across the middle of the throat; back mostly cinnamon; upper tail-coverts grey; entire base of quills rufous . . . . *collaris.*

Mirafra nivosa.

Certhilauda nivosa, Swains. B. W. Afr. i. p. 213 (1837).

Alæmon nivosa, Sharpe, Cat. B. M. xiii. p. 522 (1890) *Lt. Namaqua, Cape Col.;* Distant, Nat. Transvaal, p. 168 (1892) *Pretoria;* Kuschel, J. f. O. 1895, p. 344 *egg;* Shelley, B. Afr. I. No. 181 (1896);

Nehrkorn, Kat. Eiers. p. 132 (1899) *egg ;* Stark, Faun. S. Afr. B. i. p. 230 (1900).

Alauda albescens, Lafr. Rev. Zool. 1839, p. 259 *Cape Col.*

Alauda guttata, Lafr. *l. c. Cape Col.*

Alauda codea, Smith, Ill. Zool. S. Afr. Aves, pl. 87, fig. 1 (1843) *Cape Col.*

Alauda lagepa, Smith, *t. c.* pl. 87, fig. 2 (1843) *Cape Col.*

Adult, summer plumage. Above bright cinnamon with black shaft-stripes on the crown, mantle and upper tail-coverts. Wings dark brown with the pale edges to the feathers buff, narrow on the primary-coverts and primaries, increasing in breadth and rufous colouring towards the inner feathers. Tail dark brown with a narrow buff margin and broad cinnamon buff outer edges to the centre pair of feathers. Eyebrow and sides of head white with the ear-coverts uniform bright cinnamon ; under parts white slightly shaded with rufous buff and strongly streaked with dark brown on the crop, sides of body and under tail-coverts ; thighs brown ; under surface of wings entirely brown with a slight ashy shade on the coverts. "Iris light reddish brown, bill light reddish brown, fading into pale orange buff at base of lower mandible ; tarsi and feet pale brown" (Smith). Total length 6·9, culmen 0·65, wing 3·8, tail 3·0, tarsus 1·1. S. Africa (*Layard*).

Adult, winter plumage. Very similar in pattern to the summer plumage but differs entirely in the colour, there being no trace of rufous on the plumage, that colour being replaced by a soft ashy brown, partially fading into white on the broader edges of the wing-feathers and the pale external margin of the tail, it also differs in the feathers of the rump being mottled with dark centres, and the general colouring of the throat and body white. Cape Town (Butler).

Type of Alauda lagepa (*Smith*). Apparently just passed out of the winter dress and nearly attained the full summer plumage.

Immature. Differs from adults in the general tone of the colouring being earthy brown ; all the feathers of the crown and some on the mantle have white marginal tips ; crop mostly brown owing to the profusion of large rounded central spots to the feathers.

The Cape White-breasted Sabota-Lark is apparently confined to western South Africa, south of the Orange river.

It is represented in the British Museum by specimens from Little Namaqualand, Cape Town, Swellendam, Berg river and the Karroo. Andersson "observed this species pretty frequently in Little Namaqualand, but not to the north of the Orange river." Sir Andrew Smith found them sparingly distributed in Cape Colony, frequenting localities thinly furnished with low brushwood, and they rarely failed when disturbed to

1. Mirafra gilletti, 2 M nævia.

fly to a distance and then perch upon the summit of some dwarf shrub. He also remarks that it whistles occasionally in the morning, soars like a true Lark, and on descending usually alights on a shrub. Its food consists of seeds and small insects.

The most eastern locality I can find for the species is Beaufort, where it has been met with by Mr. Layard. He writes :—"A single nest fell under our observation in December. The eggs, four in number, and of a mottled brown, were deposited in a cup-shaped nest on the side of a low bush at the edge of a footpath. When we approached it the bird crept away to a little distance, then rose, flew a few yards, and perched on an ant-heap to watch us. As we were proceeding to kill a *Hyæna*, which had been caught in one of our traps, we deferred taking the eggs until our return; but coming home by a different route, we had to leave them till next morning, when on proceeding to the spot we found the young excluded. The hen bird, on this and several subsequent occasions, executed the same manœuvres to escape detection."

There is, in my opinion, no reason for doubt that the type came from Cape Colony, although Swainson first described the species in his Birds of West Africa i. p. 213, which caused Dr. Hartlaub to enter it in his Ornithologie West-afrikas, p. 153, as West African, on the supposed authority of Swainson, although Swainson never mentions any locality for the type of the species. The types of *Alauda codea* and *A. lagepa* (Smith) are both in the British Museum, the former is in winter plumage, and the latter, the same species, in summer.

Mirafra gilletti. (Pl. 15, fig. 1.)

Mirafra gilletti, Sharpe, Bull. B. O. C. p. 29 (1895) *Somali;* id. P. Z. S. 1895, p. 472; Shelley, B. Afr. I. No. 205 (1896); Elliot, Field-Columb. Mus. i. No. 2, p. 37 (1897) *Hillier;* Lort Phillips, Ibis, 1898, p. 401; Hawker, Ibis, 1899, p. 64 *Somali;* Grant, Ibis, 1900 p. 138 *Abyssinia;* Sharpe, P. Z. S. 1901, p. 302 *Somali.*

Adult. Above cinnamon brown, paler on the hind neck, and ashy grey on the rump and upper tail-coverts, and mottled with brownish black shaft stripes, which are narrow on the crown. Wings dusky brown, with no rufous pattern; broad pale edges to the coverts, and inner secondaries whitish, generally with a submarginal wash of rufous; under surface dusky ash, the inner edges of the quills narrowly washed with white, and the under wing-coverts mottled with that colour and a little rufous buff. Tail dark brown with narrow brownish buff edges to the feathers, and no white pattern. A broad eyebrow, space in front and under the eye, and the cheeks white; ear-coverts rufous brown, with very narrow whitish streaks; three lines of black, one from nostril to eye, a second from gape to beneath the ear-coverts, and the third on the side of the upper throat; sides of upper neck and the under parts generally pure white, with rufous brown shaft-stripes on the middle and lower throat and crop. Iris light hazel; bill brown, with the upper mandible much darker than the lower one, tarsi and feet pale brown. Total length 6·6 inches, culmen 0·55, wing 3·5, tail 2·8, tarsus 0·9. ♂, 29. 11. 97 Arabsiyo (Hawker).

Gillett's Sabota Lark inhabits Somaliland and southern Abyssinia.

The type was procured at Sibbe, in western Somaliland, during Dr. Donaldson's Smith's journey through that country in 1894, and was named after Mr. F. Gillett, who accompanied the expedition. Specimens have also been collected by him at Magog in February, 1899, by Mr. Elliot at Huillier, by Mr. Lort Phillips at Goonban, and by Mr. Hawker at Arabsiyo. In the Wollo Gala country of southern Abyssinia Lord Lovat shot a specimen at Hawash Bridge in about 8° N. lat. 4° E. long.

Mirafra sabota.

Mirafra sabota, Smith, Rep. Exped. C. Afr. App. p. 47 (1846) *N. of Latakoo;* Sharpe, Cat. B. M. xiii. p. 618 (1890) *Latakoo, Orange River Colony, Natal, Transvaal, Matabele;* Shelley, B. Afr. I. No. 215 (1896); Sharpe, Ibis, 1897, p. 514 *Zululand;* Stark, Faun. S. Afr. B. i. p. 208 (1900).

Type. Above, pale rufous shaded brown with broad blackish brown shaft-bands. Wing brown, with brownish buff edges to the feathers, broad on the coverts and inner secondaries, and very narrow on the other quills

and primary-coverts; four inner primaries and four outer secondaries with white terminal edges; under surface dusky ash, with partial buffy white inner edges to the quills and the coverts, mottled with sandy buff edges to the feathers. Tail-feathers blackish brown, with sandy buff edges of a slightly darker shade on the centre than the outer ones, and much narrower on all the others; outer feather with the base of the shaft and the whole outer web pale. Eyebrow and cheeks buff, ear-coverts tawny brown margined above by a black stripe extending to the nostril; two partial black lines on the side of the upper throat; under surface generally buff, mottled on the lower throat and crop with triangular spots of dark brown, which colour forms an ill-defined dark patch on the crop next to the sides of the neck. "Iris dark hazel; bill horn colour; tarsi and feet flesh colour." (T. E. Buckley.) Total length 5·9 inches, culmen 0·5, wing 3·4, tail 2·2, tarsus 0·9. S. Africa (Smith).

The Sabota Lark inhabits South Africa south of the Zambesi and east from about 25° E. long.

Dr. Bowdler Sharpe, in 1890, recorded the range of this species as extending into Masailand, solely because Dr. Reichenow referred to one of Fischer's specimens from Loeru as *M. sabota*, J. f. O., 1887, p. 74. In the Vög. Deutsch. O. Afr. p. 203 (1894) Dr. Reichenow omits the present species, and the only *Mirafra* he mentions from Loeru is *M. africanoides*.

According to Sir Andrew Smith, who discovered the type, "this Lark was procured on the arid Karroo plains north of Latakoo, and was found in tolerable abundance towards the Tropic of Capricorn. It was generally observed in localities abounding with small shrubs, on which it was frequently observed to perch, particularly in the early part of the morning, when it was in the habit of practising, like its congeners, vertical flights into the air. It whistles occasionally when perched upon the underwood; but there is nothing in its note to attract attention."

In Natal Mr. T. Arnold obtained the species at Weenen, and the Messrs. Woodwards have collected specimens in Zululand, at Ulundi and the Black Umfolosi river.

To the north of the Vaal river there are several of Mr.

T. E Buckley's collecting from the Transvaal and Swaziland in the British Museum, and he writes: "These birds are very common north of Pretoria, sitting on bushes quite as much as on the ground; they are mostly solitary, even a pair being rarely seen together excepting in the breeding season. They range as far as the Matabele country." Mr. T. Ayres found these Larks in the Mariqua district, frequenting the open glades at the commencement of the thicker bush, but in the latter he did not notice them. When disturbed they generally flew from the ground on to the nearest shrub. It has a short but pleasing song. He also procured specimens in the Rustenburg district, and found them "rather common amongst the thorn-trees on the banks of the Limpopo, where they occur either singly or in pairs." To the north of that river, at Matje Umschlope, he only met with a single specimen in November, and the late Mr. Frank Oates obtained one at Tati in October.

Mirafra nævia. (Pl. 15, fig. 2.)

Alauda nævia, Strickl. Contr. Orn. 1852, p. 152 *Damara.*

Mirafra nævia (Strickl.) Sharpe, Cat. B. M. xiii. p. 617 (1890) *Damara, Great Namaqua, Griqualand, Orange River Colony;* Fleck J. f. O. 1894, p. 411 *Damara,* Shelley, B. Afr. I. No. 213 (1896); Stark, Faun. S. Afr. B. i. p. 209 (1900).

Adult. Very like *M. sabota*, but paler and with a larger bill. Above sandy brown with broad dark brown shaft-bands; the pale edges to the wing-coverts and inner secondaries very much broader than those of the other quills and primary-coverts; primaries with narrow white terminal edges; no rufous on the wings, which have the under surface pale dusky brown slightly washed with sandy buff on the inner margins of the quills and the coverts are mottled with edges of that colour. Tail brownish black with the centre feathers rather paler and very broadly edged with pale rufous brown; outer feather with a buff margin extending about half way across the outer web, and round the end, all the other feathers have buff margins, narrower along the sides than at the ends. Ear-coverts brown slightly

streaked with buff; a dusky band in front of the eye; eyebrows and cheeks white, the latter mottled with dusky black; two rows of dusky black spots on the side of the upper throat; under parts generally white, of a buff shade on the breast and under tail-coverts and a slightly more rufous shade on the crop, which is mottled with angular brown spots. "Iris brown; bill dark horn; legs flesh colour." Total length, 6·2 inches, culmen 0·6, wing 3·4, tail 2·2, tarsus 0·8. ♂, 21. 6. 81. Orange R. (Bradshaw.)

Strickland's Sabota Lark inhabits South-west Africa, westward of about 25° E. long.

There are specimens in the British Museum from Damara, Great Namaqua and Griqua Lands and the Orange river.

Andersson writes: "I met with this Lark at various places north of the Omaruru river, where, although rather local, it is abundant in some localities, and especially in Ondonga. On April 25 I found its nest in the last-named locality, containing three eggs of a very elongated form and much pointed at one end. Other nests which I met with on various occasions were empty or contained young birds. The nest is composed of fine grasses, and is built upon the ground, into which the lower portion of it is sunk to the depth of two or three inches; it is placed between and resting against two stout plants, and is round and dome-shaped, with one large opening to the southward, the side freest from the wind and rain. I am always delighted to hear this bird as it makes the welkin ring with its sonorous song and call, composed of a series of notes, which it utters either when perched on a tree or when moving from one spot to another. Whilst thus flying and singing it may be seen alternately to open and close its wings; sometimes almost bringing them to meet over its back, when it appears for the moment to be suspended in the air." He also found it very common about Otjimbinque and by no means timid, feeding upon seeds and insects.

Mirafra plebeia.

Alauda (Megalophonus) plebeja, Cab. J. f. O. 1875, p. 237; Reichen. J. f. O. 1877, p. 29 *Loango*.

Mirafra plebeia, Sharpe, Cat. B. M. xiii. p. 593, note (1890); Shelley, B. Afr. I. No. 208 (1896).

Type. Very similar in pattern and measurements to *M. nævia*; but the upper parts are greyer with no sandy coloured edges to the feathers. Total length 5·75 inches, culmen 0·6, wing 3·36, tail 2·08, tarsus 0·88.

Cabanis's Sabota-Lark inhabits the Loango Coast.

This species is apparently known only by the type specimen, which formed part of the collection made by Falkenstein on the Loango Coast, and is now in the Berlin Museum.

Dr. Reichenow has kindly informed me that it is nearly allied to *M. nævia*, and pointed out the characters I have used in my description of this species.

Mirafra pæcilosterna. (Pl. 16, fig. 1.)

Alauda pæcilosterna, Reichen. Orn. Centralbl. 1879, p. 155; id. J. f. O. 1879, p. 353 *Kibaradja*.

Mirafra pæcilosterna, Sharpe, Cat. B. M. xiii. p. 612 note (1890); Reichen. Vög. D. O. Afr. p. 203 (1894) *Pare, Arusha, Masai*; Shelley, B. Afr. No. 210 (1896).

Megalophonus massaicus, Fisch. and Reichen. J. f. O. 1884, p. 55, *Little Arusha*.

Adult. Similar to *M. gilleti*, from which it differs in having the upper parts rather less mottled; a grey shade on the crown; pale portion of sides of head cinnamon instead of white; under parts more rufous; feathers of the lower throat with large uniform cinnamon centres; throat, flanks, thighs and under tail-coverts washed with cinnamon; under wing-coverts cinnamon; inner edges of quills slightly tinted with that colour. "Iris, feet and bill brown" (Ansorge). Total length 6·8 inches, culmen 0·6, wing 3·4, tail 2·9, tarsus 0·95. ♂, E of Kilimanjaro (Abbott).

The Masai Sabota-Lark inhabits East Africa from the latitude of Zanzibar to the Equator.

Fischer collected the type of the species, a male, at

1. Mirafra pœcilosterna.
2. " fischeri.

Kibaradja in November, and other specimens in the Pare mountains. He found the species not uncommon amongst the scattered acacia bushes between this range of mountains and the Pangani river, and recognised his *Megalophonus massaicus*, founded on a specimen from Little Arusha, not to be specifically distinct. In British East Africa Dr. Ansorge has procured specimens at Kinani and the Tsavo river, and Dr. Abbott others to the south and east of the Kilimanjaro mountain.

Mirafra apiata.

Alauda apiata, Vieill. N. Dict. H. N. i. p. 343 (1816) *S. Afr.*
Mirafra apiata, Sharpe, Cat. B. M. xiii. p. 598 (1890) *Cape Col.*; Shelley, B. Afr. I. No. 196 (1896); Nehrkorn, Kat. Eiers. p. 134, *egg*; Stark, Faun. S. Afr. B. i. p. 217 (1900).
Alauda clamosa, Steph. Gen. Zool. xiv. p. 23 (1826) *S. Afr.*

Adult. Above rufous or brown washed with pale grey, the feathers with a variable amount of narrow black bars and rarely any trace of shaft-stripes; upper tail-coverts reaching three quarters of the way down the tail and are crossed by six black bars and have greyish buff edges. Tail with the two centre feathers barred and very like the upper tail-coverts in colour and pattern; remainder blackish, partially washed with grey and surrounded by a buff margin which extends over almost the whole of the outermost web on each side, the other feathers with narrow grey edges. Wing with the coverts and inner secondaries much like the back, but the latter have partial bars and a submarginal dark line more strongly marked; remainder of the quills and the primary-coverts uniform brown with pale rufous shaded outer edges to all but the first two primaries; these rufous edges are mostly notched with the dark brown of the outer part of the feathers; under wing-coverts pale cinnamon; under surface of quills entirely dark brown with only a light wash of rufous buff on the inner margins. Sides of head sandy buff strongly mottled on the cheeks and ear-coverts with blackish spots and streaks; under parts generally sandy buff, shaded on crop and sides of body with rich rufous centres to the feathers and regularly spotted down the entire throat with blackish angular shaft-marks. Total length 6·7 inches, culmen 0·5, wing 3·3, tail 2·3, tarsus 1·0.

Two of Layard's specimens in much worn plumage have lost almost all trace of bars on the wings and tail-feathers, and the upper parts generally are dusky black with narrow ashy edges to the feathers.

Immature. Similar to adult first described but browner and less rufous, innermost secondaries with two concentric black lines, the next few with partial bars and one submarginal black line; rufous margins of outer secondaries and the primaries broader and as nearly cross the outer web as they do in *M. fischeri.* The tail differs in the barred character of the centre feathers being reproduced on the others to a gradually diminishing extent towards the outer feathers; a distinct white eyebrow. Iris hazel, bill dark horn colour with the basal two-thirds of lower mandible and edges of upper one towards the gape buff; tarsi and feet pale flesh colour. Total length 6·1 inches, culmen 0·5, wing 3·2, tail 2·3, tarsus 0·95. ♂, 22. 1. 74. Stellendorf (Shelley).

The Cape Bar-tailed Lark is apparently confined to Cape Colony. Mr. Layard writes: "This beautiful Lark, of whose elegant colours it is impossible to convey any idea by mere words, is common in all the western districts of the colony, and is well known from its singular habit of rising fifteen or thirty feet into the air, perpendicularly, making a sharp crackling sound with its wings as it rises, uttering a long shrill 'phew,' and then falling as abruptly to the earth. This action it will repeat at intervals of a minute or two, for an hour or more, chiefly during dull mornings, but in bright weather it commences before and after sunset. It delights in warm sandy soils; but we met with it on the high table-land of the Cold Bokkeveld in considerable abundance. It is not met with at George, according to Mr. Atmore, but extends as far as Port Elizabeth. 'Here,' writes Mr. Rickard, 'it is common. It is most lively at sunset and sunrise, sometimes heard when it is nearly dark. If on the ground near short scrubby bush it will run into it and may be driven a long distance before taking wing.' We have seen specimens also from Kuruman."

The egg, according to Mr. A. Nehrkorn, is greyish yellow with spots of violet or rufous brown evenly distributed over the surface and measures 0·88 × 0·6.

Mirafra fischeri. (Pl. 16, fig. 2.)

Megalophonus fischeri, Reichen. J. f. O. 1878, p. 266 *Rabai;* Hartl. Abhandl. Ver. Brem. 1891, p. 17 *Usambiro.*

Mirafra fischeri, Salvad. Ann. Mus. Genov. 1888, p. 267 *Shoa;* Sharpe, Cat. B. M. xiii. p. 600 (1890) *Landana, Gaboon, Swazi, Zambesi, Wadelai;* Reichen. J. f O. 1891, p. 159; 1892, p. 53; id. Vög. D. O. Afr. p. 202 (1894) *Pangani, Kakoma, Uniamwesi, Simiu R., Bussissi;* Shelley, Ibis, 1894, pp. 23, 472 *Nyasa;* id. B. Afr. i. No. 198 (1896); id. Ibis, 1898, pp. 379, 553 *Nyasa;* Alexander, Ibis, 1899, p. 563 *Zambesi;* Hartert in Ansorge's "Under Afr. Sun," p. 348 (1899) *Teita;* Stark, Faun. S. Afr. B. i. p. 216 (1900); Marshall, Ibis, 1900, p. 243 *Mashona;* Sclater, P. Z. S. 1900, p. 2 *Nyasa;* Hartert, Nov. Zool. 1900, p. 46 *Toru;* Grant, Ibis, 1901, p. 628 *S. Abyssinia.*

Mirafra tigrina, Oust. Le Naturaliste, 1892, p. 231, *Congo.*

Adult. Very similar to *M. apiata*, but most readily distinguished by the under surface of quills showing broad pale cinnamon inner margins and their outer webs, viewed from above, have also as much cinnamon as in the wings of the immature of *M. apiata;* inner secondaries have little or no trace of dark bars. Tail with the pale portion larger and pale rufous; more than half of the outer feather and nearly the entire outer web of the penultimate one being of that colour. "Iris brown; bill horn colour; tarsi and feet light brown." Total length 5·2 inches, culmen 0·5, wing 2·9, tail 2·0, tarsus 0·95. ♂, 7. 76. Swaziland (T. E. Buckley).

Adult female. Similar to the male and scarcely smaller. ♀, 11. 8. 86. Wadelai (Emin).

Fischer's Bush-Lark ranges from the Loango coast southward into Benguela and Swaziland, and throughout Central and Eastern Africa northward to Wadelai on the White Nile and into Southern Abyssinia.

This species is apparently abundant in the Congo district, for in the British Museum there is a good series from Landana, Condé and Kassongo; and from the description of *M. tigrina*, Oust., from the Congo, it would appear that that bird belongs to this species.

In Benguela, Anchieta has collected specimens at Caconda, where it is called by the natives "Kitianonhe." To this species probably refers Chapman's *Brachyonis pyrrhonota*,

which he "only observed near the Okavango." In eastern South Africa Mr. T. E. Buckley shot a specimen in Swaziland, which is the most southern range recorded for this species, and is the only instance known to me of the species having been met with beyond the limits of tropical Africa. To the north of the Limpopo the species has been found by Jameson and Ayres at the Umfuli river, where these birds are known to the Matabele as "Quatji." Mr. Guy Marshall believes it to be a "fairly common species round Salisbury, its curious crackling flight being very characteristic." Specimens have been collected by Bradshaw between the Limpopo and the Zambesi, and at the latter river Mr. Boyd Alexander found them "frequenting hilly woodland where the grass is long, or where it has lately been burnt." It appears to be by far the commonest Lark in Nyasaland or British Central Africa, and is apparently plentiful throughout German East Africa.

Böhm met with it at Kakoma and his description of its habits agrees closely with that given by Layard of the habits of *M. apiata*, its near Cape Colony ally. Fischer has collected specimens at Usaramo, Pangani, the Simiu river, and at Mombasa, where he procured the type; he also met with it in the Wanika and Wapokomo countries.

Amongst the most northern-known localities for this species are Wadelai on the Upper White Nile, where Emin has collected specimens, and the Shoa district of South Abyssinia; here Dr. Ragazzi met with it at Ula, and Mr. A. E. Pease obtained two specimens at Kora (8° 30′ N. lat., 38° 30′ E. long.), and the latter naturalist writes: "Fischer's Bush-Lark was heard in the early morning, its note being a muffled rattle-like noise. When on the wing it soared high out of sight, then fell rapidly to within twenty or thirty feet of the ground, and swerved for a hundred yards or so before

alighting. It was generally seen in large, bare woods, and we never came across it except in the edge of the Gueragué country."

Mirafra rufocinnamomea.

Megalophonus rufocinnamomea, Salvad. Atti. Soc. Ital. Sc. Nat. 1865, p. 378 *Abyssinia.*

Mirafra rufocinnamomea, Sharpe, Cat. B. M. xiii. p. 600 (1890) *Ugogo;* Reichen. Vög. D. O. Afr. p. 203 (1894); Shelley, B. Afr. I. No. 199 (1896); Hartert, Nov. Zool. 1900, p. 46 *Campi-ya-Simba;* Neum. J. f. O. 1900, p. 291 *Usegua.*

Geocoraphus elegantissimus, Heugl. J. f. O. 1868, p. 228 *Abyssinia;* id. Orn. N. O. Afr. p. 690; App. cli. (1871).

Mirafra torrida, Shelley, P. Z. S. 1882, p. 308, pl. 17 *Ugogo.*

Type of M. torrida. Above rich cinnamon with no distinct bars; crown and mantle with blackish shaft-stripes and obsolete rufous brown ones on the lower back and upper tail-coverts; longest tail-coverts uniform cinnamon. Tail uniform dark brown with a large pale rufous pattern extending over the outer feather with the exception of a broad inner mark, and the whole of the outer web of the next feather. Wing with the upper coverts and inner secondaries cinnamon, with buff edges and a few partial blackish bars on the median and greater coverts as well as on the inner secondaries; the latter have partial submarginal black streaks; remainder of the quills with broad cinnamon margins to both webs; under wing-coverts rufous buff. Eyebrow and sides of head rufous buff, the latter mottled with deeper rufous; under parts rufous buff, mottled on the lower throat and crop with cinnamon and a few partially black shaft-stripes. "Iris brown; bill dusky grey, paler below; tarsi and feet pale brown" (Ansorge). Total length 5·7 inches, culmen 0·5, wing 2·9, tail 2·0, tarsus 0·95. Ugogo (Kirk).

Salvadori's Cinnamon Lark ranges from Ugogo into Abyssinia.

This species is represented in the British Museum by a single specimen, the type of *M. torrida*, which was procured for me by Sir John Kirk in Ugogo, in which country, according to Hartlaub, Emin has collected several specimens. Mr. Oscar Neumann records two males from Majuju in Northern Usegua, and Mr. Hartert one in Dr. W. J. Ansorge's collection from Campi-ya-Simba in British East Africa.

The type of *Megalophonus rufocinnamomea* came to the Turin Museum from the Jardin des Plantes, Paris, and according to Heuglin was obtained by the missionary Calvi in Abyssinia. There can, I think, be no doubt but that *Alauda elegantissima*, Heugl., and *M. torrida*, Shelley, both belong to this species, as they all agree well in measurements, general colouring, and especially in the peculiar colour and pattern of the tail.

The type of *Alauda elegantissima* was procured in the snow-clad highlands to the north of Lake Tana, where Heuglin met with these birds perched on the rocks or hovering in the air, and he likens their song to that of the Crested Lark.

Mirafra rufipilea.

Alauda rufipilea, Vieill. N. Dict. H. N. i. p. 345 (1816) *S. Afr.*

Mirafra rufipilea (Vieill.) Sharpe, Cat. B. M. xiii. p. 597 (1890) *Orange River Colony, Transvaal ;* Shelley, B. Afr. I. No. 195 (1896); Stark, Faun. S. Afr. B. i. p. 218 (1900).

Brachonyx pyrrhonota, Smith, Ill. Zool. S. Afr. Aves, pl. 110, fig. 2 (1847) *S. Afr.*

Alauda fasciolata, Sundev. Œfv. K. Vet. Ak. Förh. Stockh. 1850, p. 99.

Adult. Above rufous slightly washed with ashy buff, the feathers with a variable amount of narrow black bars, and rarely any trace of shaft-stripes; upper tail-coverts, which reach quite three quarters of the way down the tail, are crossed by six black bars, and have terminal buff fringes. Tail with the two centre feathers barred and very like the upper tail-coverts; remainder of tail blackish brown, narrowly fringed at the end with buff; the shaft, outer web and end of the outer feather cinnamon buff, and a narrow edge of that colour along the outer edge of the penultimate feather. Wing with the coverts and inner secondaries coloured much like the back, but with numerous partial bars which merge into each other towards the edges of the feathers, and form more or less distinct submarginal black lines, which are very characteristic of a few of the nearest allied species; the dark bars gradually disappear, and the rufous base increases towards the primaries, which are uniform cinnamon with the ends and the entire bastard primary dusky brown; under surface of the wing pale cinnamon with the

bastard-primary and broad ends to the other quills dusky brown. Sides of the head sandy buff slightly mottled with brown, and shaded with rufous on the ear-coverts; sides of the upper neck and the under parts generally sandy buff; the lower throat spotted with dark brown angular shaft-marks. "Iris light hazel; bill pale with the culmen dusky brown; tarsi and feet pale brown." Total length 5·9 inches, culmen 0·55, wing 3·3, tail 2·1, tarsus 1·0. ♀, 5. 10. 82. Rustenburg (T. Ayres).

The Rufous-crowned Bar-tailed Lark ranges from Bloemfontein to Rustenburg in South Africa.

All I know for certain regarding the range of this species is that the British Museum contains a specimen from Bloemfontein obtained by Dr. Exton, and one shot by Mr. W. Lucas near Rustenburg, both of which were formerly in my own collection.

Sir Andrew Smith informs us that he procured only one specimen, and having lost it, his description of *Brachonyx pyrrhonota* was taken from "hasty notes made at the time it was killed." This hardly justified him in stating that this species "inhabits arid districts on both coasts of Cape Colony, but in no locality are specimens abundant." It appears to me probable that this species is confined to the country which intervenes between the range of *M. apiata* and *M. fischeri*. The bird brought back from the Zambesi by Serpa Pinto (*M. rufipilea*, Bocage Orn. Angola, p. 376) is certainly *M. fischeri*.

In the Transvaal Mr. T. E. Buckley met with the true *M. rufipilea* on the "High Veldt," and the following notes by Mr. T. Ayres also refer to this species: "These Larks are only found on the open plains, extending from Potchefstroom to the bush at Mariqua; they are generally two or three together, and lie so exceedingly close that they can often be knocked down with a stick." "This Lark has precisely the peculiar habits of *M. apiata*."

"Male, shot January 15. Stomach contained caterpillars,

&c. This bird is called amongst the farmers the 'Rain-bird,' as they consider it a sign of rain that it rises during the breeding-season for some yards in the air with a fluttering flight, descending with a loud *whew* when this action is often repeated; but it is very certain that the same habit prevails during a succession of dry weather; in fact, it is one way in which the cock bird pays its addresses to the hen, the weather has very little to do with it."

Mirafra hypermetra. (Pl. 17, fig. 2.)

Spilocorydon hypermetrus, Reichen. Orn. Centralb. 1879, p. 155, *Kibaradja;* Sharpe, Cat. B. M. xiii. p. 620 (1890) *Shoa;* Hartl. Abh. Nat. Ver. Bremen, 1891, p. 25, *Baguera;* Reichen. Vög. D. O. Afr. p. 202 (1894) *Pangani, Usaramo, Sigirari;* Shelley, B. Afr. I. No. 218 (1896); Grant, Ibis, 1900, p. 138, 1901, p. 627 *S. Abyssinia.*

Mirafra hypermetra, Hartert in Ansorge's "Under Afr. Sun," p. 349 (1899) *Voi R.*

Adult. Above mottled ashy brown with dark centres to the feathers; rump and upper tail-coverts with subterminal dark bars. Tail uniform dark brown with narrow whitish edges to the feathers. Wing: inner feathers like the back, but mostly edged with submarginal black lines; remainder cinnamon with a few dark shaft-marks on the coverts and the ends of the quills brown the cinnamon colour crossing entirely both webs of the quills with the exception of the inner secondaries and the two outer primaries; wing-lining with the under coverts of the same shade of cinnamon as the pale portion of the quills. Eyebrow, sides of head, and sides of upper neck buffy white, mottled with brown and black; chin and upper throat white; remainder of the under parts buff; crop slightly mottled with rufous and the flanks washed with dusky ash; lower throat and crop with angular blackish shaft-spots, most numerous on the sides, where they form the usual fairly distinct black patch between the crop and the side of the neck; a few indistinct shaft-stripes on the flanks and some more sharply defined ones on the under tail-coverts. "Iris hazel; bill above dark horny-brown, paler below; legs pale." Total length 8·5 inches, culmen 0·7, wing 4·3, tail 3·5, tarsus 1·25. ♂, 21. 1. 99. Gadaburka (Lovat, Mus. Brit.).

A specimen labelled "♂, Smara, Feb. 2, 1900 (Lord Delamere)," is much more rufous on the upper parts, crop and sides of chest.

1. Mirafra athi. 2. M hypermetra

Reichenow's Large Red-winged Lark inhabits East Africa between 5° S. lat. and 10° N. lat.

Emin has procured five specimens at Baguera in November, March and May, and Fischer found it distributed over East Africa from the Pangani to the Tana river, and remarked its habit of perching upon bushes to sing; he collected specimens in German East Africa, between the Pare mountains and the Pangani river, and at Usaramo and Sigerari, to the west of Kilimanjaro, and in British East Africa at Lake Naiwasha, and discovered the type at Kibaraja on the Tana river. Dr. Ansorge obtained a specimen at the Voi river, and Dr. Ragazzi one in Shoa, at Soddé, which is the most northerly known range for the species, while in about the same latitude Mr. A. E. Pease collected specimens at Errer Gota and Katinwaha, and Lord Lovat others at the Kassim river and Gadaburka. The latter naturalists found the species abundant on the Hawash plain, but it was shy, and he remarks: "During the day it soars occasionally to a height of ten feet or so from the ground, where it hovers for two or three minutes at a time." He further remarks, "it sings in all weathers, and perches most frequently on dead tree-stumps and old wood."

Mirafra sharpei.

Mirafra sharpei, Elliot, Field Columb. Mus. Orn. i. No. 2, p. 37 (1895) *Somaliland.*

"Head rufous, the feathers generally having a black spot at the tip. Nape and sides of neck dark rufous, feathers edged with pale buff. Back dark rufous or chestnut, feathers margined with buff and with a black subterminal V-shaped bar. Rump similar to back, upper tail-coverts brownish black with grey margins, and a black spot near the tip. Wings have the inner secondaries like the back, outer rones ufous for two-thirds their length, remaining portion pale brown, and a black line running parallel to the shaft near the margin of outer web, tips white. Primaries light chestnut for two-thirds their length on outer quills, pale brown on remaining part. The chestnut colour increases in extent on the inner primaries, until the inner-

most is all chestnut with a blackish brown tip; under wing-coverts deep buff; primary-coverts rufous. Central rectrices blackish brown, mottled with black in the middle, grading into rufous towards the outer edges of the webs, which are margined with white, and an irregular black line runs along the web near its margin. Remainder of rectrices blackish brown, margined with white, but the outermost rectrix has the entire outer web pale buff. Superciliary stripes pale buff; ear-coverts and cheeks white spotted, and streaked with black. Throat and sides of neck white. Breast buff, streaked and spotted with brownish black, lower parts, flanks and under tail-coverts pale buff, inclining to white. Bill long, slender, horn colour. Tarsi and feet flesh colour; irides brown. Total length, skin 6·10 inches, wing 4, tail 3·50, culmen ·70, tarsus 1·20."

Sharpe's Large Red-winged Lark inhabits Somaliland.

This species resembles *M. hypermetra* in the length of the tail being 3·5 inches, but differs in the more rufous colouring of the plumage and in the entire outer webs of the lateral tail-feather being white, as in *M. africana;* but this last-mentioned species, as well as *M. athi*, have the tail only 2·5 inches in length.

This species being known only by the type which was shot on the north side of the Sila Plain by Mr. Elliot, I have quoted his description.

Mirafra athi. (Pl. 17, fig. 1.)

Mirafra africana athi, Hartert, Nov. Zool. 1900, p. 46 *Athi plain, Nairobe;* id. Bull. B. O. C. xi. p. 63 (1901) *Mau.*

Mirafra africana (nec Smith), Sharpe, Ibis, 1891, p. 260 *Ukambani;* Jackson, Ibis, 1899, p. 624 pt. *Nakuru, Naiwasha;* Hinde, Ibis, 1900, p. 494, *Machako's.*

Adult. Similar in general colouring to *M. hypermetra*, but smaller and differs mostly in the tail, the centre feathers of which are obscurely but slightly more barred and with the pale margins broader and more distinctly edged internally by a black streak, and the pale buff pattern of the outer feather extends very nearly over the whole of the outer web; wings with the coverts more rufous buff and are very regularly marked with dark central spots; spots on the throat slightly smaller. "Iris orange; bill

above dark grey, beneath yellowish grey" (Ansorge).[1] Total length 7·3 inches, culmen 0·7, wing 4·0, tail 2·4, tarsus 1·2. ♂, 5. 11. 99. Athi river (Delamere).

Immature. "Much blacker, the crown and head almost black, the feathers of the upper side and the wing-coverts are blackish brown with sharply defined white edges. The spots on the crop-region are larger than in the adult bird, the rectrices, as usual in young Larks, are narrower and somewhat pointed. 'The iris was brown; feet light brown.'" (Nairobe. 31. 1. 99. Ansorge) Hartert.

The Athi Lark inhabits the country between Victoria Nyanza and Somaliland.

The species was discovered by Dr. Ansorge in January, 1899, when he collected two adult birds on the Athi plain, and an immature bird a few days later at Nairobe. Lord Delamere has also met with these Larks at the Athi river, so they are apparently not rare in this district, but are possibly rather local. Mr. Jackson has procured specimens near Lakes Naiwasha and Nakuru. At the latter place on April 20, 1896, he "found a nest in a tuft of grass built entirely of fine, dry grasses. Two eggs, one much paler and with smaller spots than the other."

This species much resembles *M. hypermetra* in its general appearance, but may be most readily distinguished by its tail, which is much shorter and has the entire outermost web white.

Mirafra africana.

Mirafra africana, Smith, Rep. Exped. C. Afr. App. p. 47 (1836) *Cape Col.;* Butler, Feilden and Reid, Zool. 1882, p. 335 *Natal;* Sousa, Jorn. Lisb. 1886, p. 167 *Benguela;* 1887, p. 101 *Quissange;* 1889, p. 116 *Catumbella;* Sharpe, Cat. B. M. xiii. p. 607 (1890) *Damara, Natal, Transvaal, Makalaka:* Reichen. J. f. O. 1892, p. 52 *Bukoba;* id. Vög. D. O. Afr. p. 202 (1894); Shelley. B. Afr. I. No. 206 (1896); Rendall, Ibis, 1896, p. 174 *Transvaal;* Sharpe, Ibis, 1897, p. 514

[1] "Iris hazel; bill brown, lower mandible horny white" ♂ (Jackson).

Zululand; Jackson, Ibis, 1899, p. 624 pt. *Ntebi;* Hartert in Ansorge's "Under Afr. Sun," p. 348 (1899) *Biboka R. Ukamba;* Nehrkorn, Kat. Eiers. p. 134 (1899) *egg;* Stark, Faun. S. Afr. B. i. p. 212 (1900); Hartert, Nov. Zool. 1900, p. 45; Marshall, Ibis, 1900, p. 244 *Mashona;* Neum. J. f. O. 1900, p. 290 *Lelela.*

Mirafra africana africana, Hartert, Nov. Zool. 1900, p. 45.

Alauda planicola, Licht. Verz. Vög. Kaffernl. p. 14 (1842) *S. Afr.* (nom. nud.).

Megalophonus planicola, Fisch. J. f. O. 1885, p. 137 *Usaramo;* Reichen. J. f. O. 1887, p. 74 *Shashi.*

Megalophonus occidentalis, Hartl. Orn. W. Afr. p. 153 (1857) *Gaboon;* Bouvier, Cat. Ois. Marche, &c. p. 27 (1875) *Gaboon.*

Megalophonus rostratus, Hartl. Ibis, 1863, p. 326, pl. 9 *Natal.*

Mirafra africana transvaalensis, Hartert, Nov. Zool. 1900, p. 45 *Rustenburg.*

Mirafra africana tropicalis, Hartert, *l. c. Trop. E. Afr. and Uganda.*

Adult male. Above mottled brown with broad blackish centres to the feathers; each feather of the crown with a large basal portion bright cinnamon; hind neck slightly paler than the back and the rump and upper tail-coverts a little more uniform; lesser wing-coverts uniform cinnamon, remainder of the coverts slightly paler rufous with blackish centres, the inner ones and the inner secondaries more coloured like the back and with basal buff edges, next to which is a blackish submarginal line; remainder of the quills with the exception of the two outer ones have broad margins of cinnamon, which colour extends entirely across both webs, but is intersected by the dark shafts; under wing-coverts fawn colour, slightly yellower than the cinnamon of the quills, which have their ends dusky brown. Tail dusky brown with sandy shaded edges; outer feather with the shaft, outer web and a terminal border sandy buff; penultimate feather with a broad sandy buff outer margin. A broadish eyebrow and sides of head buff with minute dark brown spots on the cheeks and ear-coverts, the latter washed with rufous inclining to dark brown along the upper margin; throat white; breast and under tail-coverts buff, washed with rufous on the front of the chest and with angular dark brown spots on the region of the crop. "Iris light hazel, bill dusky above fading into pale yellowish flesh colour on the lower mandible; tarsi and feet yellowish flesh colour. Total length 6·9 inches, culmen 0·7, wing 3·7, tail 2·5, tarsus 1·2. ♂, 29. 5. 75. Pinetown (T. L. Ayres).

Female. Similar in plumage to the male. Total length 6·5 inches, culmen 0·65, wing 3·3, tail 2·2, tarsus 1·15. ♀, 7. 5. 75. Pinetown (T. L. Ayres).

Two Damara specimens, very much worn, differ in having the crown bright cinnamon with partial blackish terminal shaft-stripes; back paler,

owing to the dark centres of the feathers being almost confined to the shafts; abdomen whiter; spots on crop less numerous.

Specimens from north of Limpopo. Either like the last (crown excepted) or with the upper parts slightly more ashy (before the moult). Colouring of younger birds or more freshly moulted specimens, like Natal birds; but the bill, which is somewhat variable, is on an average slightly smaller.

Transvaal specimens form a good intermediate link between the last form and Natal birds. The few specimens I have seen from Equatorial Africa are rather rufous, but I find no definite character by which they may be distinguished, so I do not recognise any subspecies of *M. africana*, for I look upon *M. athi* as a good species.

The Rufous-naped Lark inhabits Africa, south of about 1° N. lat.

The habits of these Larks are well summed up by Stark as follows: "Generally met with on open grassy plains in pairs, feeding on the ground on small seeds and insects. If alarmed or followed it runs along the ground with great swiftness and frequently hides under the grass; sometimes it takes wing at once, uttering a sharp cry as it does so. On sunny days this Lark is fond of airing itself on the top of a bush, constantly opening and shutting its wings as it utters its loud note. At times it rises a few yards in the air with a fluttering flight, during which it sings a few notes not unmelodiously. In the North-western Transvaal these Larks breed in numbers. The nest is well concealed and by no means easy to find. A hollow is scratched well under shelter of a tuft of grass and lined with fine dry grass; some grass stems are then pulled over the nest and intertwined with long blades of dry grass so as to form an arched bower, a small side entrance being left on one side. Three elongated eggs are laid about the second week in December; these are cream coloured, spotted all over with pale brown, more thickly at the obtuse end with dark brown and purplish brown, often in the form of a zone. They average 0·95 × 0·60."

I have retained the name *Mirafra africana*, Smith, for

this species, as *Alauda africana*, Gm., 1788, is the same as *Certhilauda capensis* (Bodd., 1783), a bird I place in another genus. The Rufous-naped Larks which I refer to, *M. africana*, Smith, have been split up into five species, and although I doubt these forms being even of subspecific value, I give the following key to them as ornithologists are not all of one opinion in such matters. The names *M. grisescens* and *M. pallidior* have not been previously published. I have found them written on the labels of some of the specimens in the British Museum by Dr. Bowdler Sharpe, which implies that these skins should be noticed as possibly belonging to distinct species.

a. Plumage generally less rufous, South of Cunene and Zambesi.	
a^1. Plumage fresher, darker, of a less sandy shade, and much less rufous showing on the crown.	
a^2 Generally: bill slightly longer; dark centres to feathers broader.	
a^3 Generally: less rufous and bill slightly larger. Cape Colony and Natal . .	*africana*, Smith; *rostratus*, Hartl.
b^3 Generally: more rufous and bill slightly smaller. *Transvaal*	*transvaalensis*, Hartert.
b^2 Generally: more ashy and bill slightly shorter. Between Limpopo and Zambesi	*grisescens*, Sharpe.
b^1. Plumage, bill and hind claw much worn; feathers paler and of a more sandy shade; much more rufous showing on the crown. Damara	*pallidior*, Sharpe.
b. Generally more rufous. North of Cunene and Zambesi	*occidentalis*, Hartl.; *tropicalis*, Hartert.

The type of *Megalophonus occidentalis*, Hartl., is one of Verreaux's specimens in the Bremen Museum from Gaboon, where the species has also been procured by Marche and de Compiègne. I have not seen the type, but it has been carefully described and is apparently not distinguishable from *M. africana tropicalis*, Hartert. This species seems to be rarer

in Equatorial Africa than its ally, *M. athi*, with which it has been sometimes confounded, for Mr. Jackson's collections contain only two from Ntebi; all his other specimens, and those obtained by Dr. Hinde, referred to *M. africana*, from Kakuru and Naiwasha lakes and from Machako's, belong to *M. athi*.

Specimens of the present species have been recorded as collected by Emin at Bukoba; by Dr. Ansorge in Ukamba and at the Biboko river; by Mr. Oscar Neumann at Lolela to the north of Lake Manjara, and by Fischer at Usaramo and on the Shashi mountains to the north-east of Speke's Gulf, so it is apparently known to occur throughout the Victoria Nyanza district; but as with *Tephrocorys cinerea* and *Corvus capensis*, there is a large intermediate tract of country from whence none of these species have yet been recorded.

This species is apparently generally distributed over Benguela, for according to Anchieta it is plentiful at Quillengues, and known there by the name "Kipembe" and at Huilla as "Kirule." He has also collected specimens near the towns of Benguela, Quissange and Catumbella.

It has not been recorded from German S.W. Africa by Chapman nor Mr. Fleck; but there are two of Andersson's specimens from Elephant Vley in the British Museum. On the labels of these Dr. Bowdler Sharpe has written the name *M. pallidior*, and at first sight they appear to belong to a well marked species; but they are both in such sadly worn plumage, that their sandy colouring and large amount of rufous exposed on the crown may be accounted for as the result of the abrasion of the feathers, and the dry nature of the country may have retarded the moult. They do not agree any better with birds from Benguela than with those from Cape Colony or the Transvaal.

In Cape Colony the species appears to be restricted to the

eastern portion, where Sir Andrew Smith procured the type of his *M. africana*. The Messrs. Woodward met with these Larks at Eschowe and Ulundi in Zululand, and Mr. T. Ayres obtained the type of *Megalophonus rostratus* in Natal, where they are abundant.

The Rufous-naped Larks are equally plentiful throughout the Transvaal. To birds from this country have been given the subspecific name of *M. africana transvaalensis* by Mr. Ernst Hartert, who regards the great mountain range from which the Vaal river rises as the boundary between this form and the typical *M. africana* of Smith.

To the north of the Limpopo, in the country from which the types of *M. grisescens*, Sharpe, came, Mr. T. Ayres, while in company with the late Mr. J. S. Jameson, shot one of the typical specimens at Kanye and writes: "This Lark is by no means plentiful. The bird we procured was breeding. The nest was placed in a small hollow behind a tuft of grass, and was roughly composed of dry half-decayed grass, loosely put together. The eggs, three in number, are white, almost entirely covered with umber brown freckles or spots of various shades, and milky white blotches, the obtuse end being the most marked; they measure 0·9 inch by 0·6." In the British Museum there are also specimens collected by Frank Oates at Tibakais Vley, 18° 52′ S. lat., 26° 18′ E. long., and by Dr. Bradshaw in the Makalaka country.

In Mashona, according to Mr. Guy Marshall, this Lark is "generally distributed, though nowhere plentiful, often frequenting the vicinity of houses in the town. It is a solitary bird, fond of settling on the top of some low bush, where it will remain for a long time, uttering its three-note call with a perseverance worthy of a better cause. When disturbed it goes off with a low fluttering flight, either alighting on the next convenient bush or dropping to the ground, when it runs

like a rat. One bird will sometimes frequent the same post for many weeks." I have failed to find any record of the occurrence of this species between Mashonaland and the Victoria Nyanza.

Mirafra cordofanica.

Mirafra cordofanica, Strickl. P. Z. S. 1850, p. 218, pl. 23; Sharpe, Cat. B. M. xiii. p. 606 (1890) *Kordofan;* Shelley, B. Afr. I. No. 204 (1896).
Galerita rutila, Von Müll. Descr. Nouv. Ois. Afr. pl. 13 (1854).
Alauda præstigiatrix, Heugl. Syst. Uebers. p. 43 (1856).
Melanocorypha ferruginea, Brehm. J. f. O. 1857, p. 82, *Kordofan.*
Ammomanes cinnamomea, Bp. Notes Coll. Delattre, p. 61 (1854).

Type. Above faintly mottled, very pale cinnamon with slightly darker cinnamon centres to the feathers and with sandy white margins to some of the feathers of the upper back. Wings with the coverts like the back; quills pale cinnamon, with the inner secondaries broadly margined with buff and a narrow submarginal blackish line; the primaries shade into more dusky pale brown towards their ends; inner lining of the wings pale cinnamon with most of the outer two quills and the ends of the primaries pale dusky brown. Tail with the four centre feathers uniform sandy brown, the remainder of the feathers dark brown with sandy buff edges and the white pattern extending over the outer feather with the exception of a dusky wedge-shaped mark on the inner web, and a wedge, half an inch long, at the end of the next feather white. Eyebrow and sides of head whitish, with the ear-coverts partially cinnamon; throat and under parts generally, white, with a few spots of dusky cinnamon on the crop, the sides of which as well as the flanks are faintly tinged with cinnamon. Total length 5·4 inches, culmen 0·45, wing 3·15, tail 2·1, tarsus 0·9. Kordofan (Petherick).

The Kordofan Lark inhabits the N.E. Soudan.

The type, possibly a pale variety of the species to which it belongs, was discovered by Petherick in Kordofan and is now in the British Museum. This Lark has also been recorded from Senaar, but apparently no traveller has noticed it in life for the last forty years.

Mirafra damarensis.

Mirafra damarensis, Sharpe, P. Z. S. 1874, p. 650, pl. 75, fig. 2 *Ovampo;* id. ed. Layard's B. S. Afr. p. 522 (1884); id. Cat. B. M. xiii. p. 612 (1890) *Ondonga;* Shelley, B. Afr. I. No. 209 (1896); Stark, Faun. S. Afr. B. i. p. 211 (1900).

Type. Above mottled pale ashy brown, with narrow pointed blackish shaft-stripes. Wing with the scapulars, coverts and inner secondaries much like the back; remainder of quills, with the exception of the two outer ones, broadly edged with very pale cinnamon, which colour entirely crosses a large portion of both webs, leaving only the shafts and broad ends dusky brown; under wing-coverts also pale cinnamon. Upper tail-coverts reaching nearly to the tip of the tail and like the two centre tail-feathers are similar in colouring to the mantle; remainder of tail-feathers blackish with the outer and terminal margins white, which colour extends over the entire webs of the side feathers. Eyebrow, sides of head and upper half of throat white, slightly shaded with ashy brown on the ear-coverts; lower throat, breast and under tail-coverts buff; region of crop with small angular blackish brown spots. Total length 5·3 inches, culmen 0·55, wing 3·5, tail 2·2, tarsus 1·1. ♂, 14. 11. 66. Ondonga (Andersson).

The Damara Lark inhabits German South-west Africa.

The only two specimens known to me of this species were collected by Andersson at Ondonga, in Ovampoland, in October and November, and are now in the British Museum.

Mirafra africanoides.

Mirafra africanoides, Smith, Rep. Exped. C. Afr. p. 47 (1836) *Cape Col.;* Sharpe, Cat. B. M. xiii. p. 616 (1890) *Damara, Orange R., Makalaka;* Fleck, J. f. O. 1894, p. 411, *Damara, Nama;* Shelley, B. Afr. I. No. 211 (1896); Stark, Faun. S. Afr. B. i. p. 210 (1900).

Adult. Above pale cinnamon, with blackish shaft-stripes. Wing with broad cinnamon edges to the quills, extending round the ends of the secondaries, this cinnamon only entirely crosses both webs at the base of the feathers, the dark brown near the shaft increases in breadth from the end of the shortest primary covert to the tip of the quill; under wing-coverts cinnamon, with the edge of the pinion buff. Tail blackish brown with pale

sides and terminal margins of cinnamon on the centre feathers and rufous tinted white on the outer ones, which have nearly the entire outer web pale. Ear-coverts cinnamon; a black band in front of eye; a broad eyebrow and the under surface generally white, a few dusky spots on sides of upper throat; lower throat with some angular dark spots and the sides of the crop and fore-chest strongly mottled with cinnamon. "Iris chestnut; bill yellowish brown; legs and feet flesh-colour." Total length 5·9 and 5·7 inches, culmen 0·5 and 0·45, wing 3·5 and 3·35, tail 2·5 and 2·4, tarsus 0·9 and 0·85. ♂, 30. 7. 85. Orange R. (Bradshaw) and ♀, Hope Town (Atmore).

The Southern Fawn-coloured Lark inhabits Western South Africa from the south of the Cunene river into Eastern Cape Colony.

The most northern known locality for this species is Ondonga in Ovampoland, where a specimen was procured by Andersson, who writes: "This bird is very frequent in the neighbourhood of Otjimbinque, and is not uncommon in various other parts of Damara and Great Namaqualand. It is easily distinguished from most of the other Larks by its reddish appearance. It is found in pairs and is comparatively tame, flying but a short distance when disturbed, and settling on the ground, or on a bush or tree; it has a kind of chirping song." Mr. Fleck has also met with the species in German South-west Africa.

Sir Andrew Smith, who discovered the type of the species, remarks: "Specimens of this bird are occasionally to be procured to the south of the Orange river, but most readily on the arid open plains which lie between that river and the tropic of Capricorn." Mr. Atmore has collected specimens in Griqualand and at Hope Town; and Mr. Ortlepp writes from Colesberg: "Found singly, inhabiting wooded places, and abounding on tall camel or thorn trees, on whose topmost twigs they are frequently to be heard pouring out a sweet, sustained song."

Mirafra alopex.

Mirafra alopex, Sharpe, Cat. B. M. xiii. p. 617 (1890) *Somali;* Shelley, B. Afr. I. No. 212 (1896).

Mirafra cordofanica (nec Strickl.), Shelley, Ibis, 1885, p. 407 *Somali.*

Type. Differs from the South African *M. africanoides* only in being a trifle darker. Total length 5·5 inches, culmen 0·5, wing 3·2, tail 2·2, tarsus 0·85, Somali (*Lort Phillips*).

The Somali Fawn-coloured Lark inhabits Somaliland and British East Africa.

Dr. Bowdler Sharpe, in 1890, recognised this form as a subspecies of *M. africanoides.* The type was shot in Somaliland by Mr. Lort Phillips, who writes: "Only met with on a few occasions, near the centre of the plateau. It perches on the topmost boughs of the trees which it leaves with a quivering flight, like our Wood-Larks, pouring forth a peculiarly sweet song."

In British East Africa Lord Delamere has procured two females from Wasa Myro and a male from Likipia, all shot in January. The season probably accounts for these specimens being slightly less rufous than the type, and for their having the dark centres to the feathers a little broader and the crop-spots rather larger and blacker; otherwise they agree well with the only specimen hitherto known.

Mirafra intercedens. (Pl. 18, fig. 1.)

Mirafra intercedens, Reichen. Orn. Monatsb. 1895, p. 96 *Masai;* Elliot, Field-Columb. Mus. Orn. i. No. 2, p. 37 (1897); Hawker, Ibis, 1899, p. 64 *Somali;* Hartert, in Ansorge's "Under Afr. Sun," p. 348 (1899) *Kiboro R.*; id. Nov. Zool. vii. p. 46 (1900) *Campi-ya-Simba*; Neum. J. f. O. 1900, p. 290 *Ngaruka;* Grant, Ibis, 1901, p. 628 *S. Abyssinia.*

Mirafra sabota (nec Smith), Reichen. J. f. O. 1887, p. 74 *Loeru.*

Mirafra africanoides (nec Smith), Reichen. Vög. Deutsch. O. Afr. p. 203 (1894) *Loeru, Masai.*

Adult. Above mottled, pale tawny brown, with blackish brown centres to the feathers, paler and more buff on the neck. Wings dark brown, with

1. Mirafra intercedens.
2. " albicauda.

broad buff edges to the coverts and inner secondaries; outer secondaries and the primaries, with the exception of the two outer feathers, have broad cinnamon margins extending entirely across the outer webs of the primaries; two outer primaries, like the primary coverts, are only narrowly edged with rufous buff. Under wing-coverts and a large portion of the inner webs of the quills cinnamon, which colour does not entirely cross the inner webs, and is scarcely visible on the bastard-primary. Tail brownish black, with broad, pale rufous outer edges to the centre pair of feathers; white on tail confined to a rather narrow outer and terminal edge of the outer feather. Ear-coverts chestnut brown; a band of black in front of the eye; a broad eyebrow; cheeks, throat, and upper half of the sides of the neck white; breast, thighs and under tail-coverts pale buff with a rufous shade on the crop and flanks; lower throat with a few angular dusky brown shaft spots on the crop, which is separated from the sides of the neck by a fairly distinct dusky black patch. "Iris brown; bill dark, with most of the lower mandible pale; tarsi and feet pale brown." Total length 6·2 inches, culmen 0·55, wing 3·7, tail 2·4, tarsus 0·9. ♂, 9. 11. 99. Athi (Delamere).

The Loeru Lark inhabits the Masai and Somali districts.

The type of the species was discovered by Fischer at Loeru and specimens have been collected by Dr. Ansorge at the Kiboro river in April and November; by Mr. Oscar Neumann at Ngaruka in December, as well as by Lord Delamere at the Athi river in November, and at Likepia in January. To the eastward in Somali it appears to be plentiful, for although Mr. Elliot writes: "We only met with this species at Dagahbar in Ogaden, about twenty miles south of Haud," Mr. Hawker was more fortunate, for from November to January he collected six specimens from Arabseyo, Ujawaji and Jifa Medir. In Southern Abyssinia Mr. A. E. Pease has procured a specimen at Melkadegaga (8° 20′ N. lat., 39° 20′ E. long.), where he found the Larks inhabiting thin bush in the open country between the Hawash river and the hills.

Mirafra hova.

Mirafra hova, Hartl. J. f. O. 1860, p. 106 *Madagascar;* Sharpe, Cat. B. M. xiii. p. 601 (1890); Shelley, B. Afr. I. No. 200 (1896); Nehrkorn, Kat. Eiers. p. 134 (1899) *egg*.

Alauda hova, Sibree, Ibis, 1891, p. 442.

Adult. Above mottled, pale rufous brown with broad dark centres to the feathers. Wings more rufous than the back; the rufous edges on the quills extending across about half of the outer and half of the inner webs; under wing-coverts and inner margins of the quills pale cinnamon. Tail blackish brown with the pattern confined to the two outer pairs of feathers; the outer feather is white, with a large, rather irregularly defined dusky wedge-shaped patch on the inner web reaching almost to its tip, the penultimate feather has a large portion of the outer web buff. A broad eyebrow and sides of head buff, the latter mottled with brown; chin and throat white shading into brownish buff on the sides of the upper neck; remainder of the under parts brownish buff; lower throat and crop with boldly marked angular blackish spots which unite into a patch between the crop and the sides of the neck. "Iris brown; feet rosy grey" (Grandidier). Total length 5·7 inches, culmen 0·45, wing 2·8, tail 1·8, tarsus 0·85.

The Hova Lark is confined to the island of Madagascar.

This species is the only representative of the family *Alaudidæ* in the whole of the Madagascar subregion. It was discovered by the late Professor Peters in the bay of St. Augustin, on the west coast of the island. Sir Edward Newton, while passing from the coast to the capital, found these birds as common as our Sky-Lark in England, wherever he crossed the open country; but they were not nearly so plentiful in the neighbourhood of Foule Point as on the great plain near Mangourou. He calls their song very poor, and he likens their flight to that of our Wood-Lark.

According to M. Grandidier they not only inhabit the plains to the east and west but are very often found in parties of six or eight, more rarely in pairs, in the midst of the bare arid highlands of the centre of the island. In habits they resemble their European allies, singing to the morning sun and rising in the air they circle round for a time and then drop rapidly to the ground, where they flit and run about in search of seeds or in pursuit of small insects. They are pugnacious by nature, so if two are placed in the same cage together, they will fight until one is killed. They roost on the ground, and their eggs are four to six in number, of a greenish yellow

dotted and freckled with reddish brown, and measure 0·8 to 0·9, by 0·55 to 0·6 inch. The specimens from the west are generally paler than those from the east. Their Hova or general name is "Sorohitra," and their provincial Malagasy names are "Vorosoy," "Boria," "Sirotsy," and "Lolokolotany"; the latter, if literally translated would be, those who give all their affection to the earth.

Mirafra fringillaris.

Mirafra fringillaris, Sundev. Œfv. K. Vet. Ak. Förh. Stockh. 1850, p. 99 *Upper Limpopo;* Sharpe, Cat. B. M. xiii. p. 606 (1890) *Damara, Transvaal;* Fleck, J. f. O. 1894, p. 411 *Damara;* Shelley, B. Afr. I. No. 202 (1896); Stark, Faun. S. Afr. B. i. p. 214 (1900).

Adult. Above earthy brown with fairly broad blackish centres to the feathers, which on the mantle are more lanceolate and edged internally with buff. Wing with the cinnamon on the quills confined to the outer edges and does not quite cross the outer webs, inner webs with narrow pale partial edges rufous buff, of the same shade as the under wing-coverts. Tail brownish black, the centre feathers with ashy brown edges, and a pure white pattern extends over the shaft and two-thirds of outer feather and nearly the whole of the outer web of the next one. Ear-coverts and cheeks pale brown mottled, with darker centres to the feathers; a broad eyebrow; throat, breast and under tail-coverts white; crop slightly shaded with rufous and with blackish brown angular spots, larger towards the base of the throat and a fairly well marked blackish patch separates the crop from the sides of the lower neck. "Iris hazel; bill horn colour; legs reddish brown." Total length 5·8 inches, culmen 0·5, wing 3·4, tail 2·4, tarsus 0·9. ♂, 29. 11. 73. Transvaal (Buckley).

The Finch-like Lark inhabits German South-west Africa and the Transvaal.

Mr. Fleck records the species from Damara and Bastardland, and in the British Museum there are three of Andersson's specimens from Damaraland, and one of Mr. T. E. Buckley's from the Transvaal. In this latter district the type was discovered by Wahlberg, and according to Stark, it is a very common resident in the North-western Transvaal, frequenting

open glades in the bush country, and is usually met with in small flocks or pairs. He also informs us: "It breeds abundantly in the Transvaal in the neighbourhood of the Limpopo and Marico rivers. A hole is scratched in the ground under shelter of a tuft of grass, and this is lined with dry grass; many of the surrounding grass-blades are bent over the nest and intertwined with long pieces of dry grass, so as to shelter it from above, a side entrance being left for the ingress and egress of the bird. From two to four eggs are deposited about the first week in December. These vary considerably, but are usually of a pale bluish ground colour, mottled and speckled all over with different shades of reddish brown and grey or slate colour, the spots frequently forming a zone round the greatest diameter. They average 0·80 × 0·62.

Mirafra cantillans.

Mirafra cantillans, Blyth, Journ. As. Soc. xiii. p. 960 (1844) *Madras;* Sharpe, Cat. B. M. xiii. p. 605 (1890); Grant, Nov. Zool. 1900, p. 248 *Arabia;* id. Ibis, 1901, p. 628 *S. Abyssinia.*
Geocoraphus simplex, Heugl. J. f. O. 1868, p. 226 *Arabia.*
Mirafra simplex, Sharpe, Cat. B. M. xiii. p. 595, note (1890).
Mirafra marginata, Hawker, Bull. B. O. C. vii. p. 55 (1898) *Ujawaji;* id. Ibis, 1899, p. 64, pl. 2, fig. 2 *Somali.*

Adult. Above pale brown, with dark centres to the feathers. Wing-coverts and inner secondaries with broad buff edges, which on the latter are margined internally with an ill-defined line of dark brown; remainder of the quills and the primary-coverts with broad pale cinnamon edges not reaching across to the shafts; under surface with broad inner edges and the under coverts buffy cinnamon. Tail brownish black with the two centre pairs of feathers paler and more rufous; outer feather and shaft white, with a wedge-shaped blackish patch covering about half of the inner web, and the entire outer web of the next feather is pure white. Eyebrow, sides of head and sides of upper neck buff, strongly mottled with dark brown on the cheeks and ear-coverts; under parts buff with the middle and upper throat white; lower throat, crop and sides of front chest with angular spots of dark brown, which colour forms a large patch on sides of the

crop next to the lower neck. "Iris pale brown; bill dusky brown; feet brown." Total length 5 inches, culmen 0·45, wing 3·0, tail 2·0, tarsus 0·9. ♀, 16. 12. 97. Ujawaji (Hawker).

The Singing Bush-Lark ranges from Somaliland and Abyssinia eastward through Arabia into India.

Mr. R. McD. Hawker shot the first African specimen of this species at Ujawaji in Somaliland, December 16, 1897, and finding it to be distinct from all other known African Larks, he made it the type of his *M. marginata*. More recently Mr. Percival has brought to England a series of six specimens from the neighbourhood of Lehej in Arabia, and these, together with three skins procured by Mr. A. E. Pease at Filwa in Southern Abyssinia, clearly prove, as Mr. Ogilvie Grant has already pointed out, that *Mirafra marginata*, Hawker, and *Geocoraphus simplex*, Heuglin, belong to one species, and should not be separated from *Mirafra cantillans*, Blyth, described in 1844, from a Madras specimen now in the British Museum. The type of *Geocoraphus simplex* was obtained by Hemprich and Ehrenberg at Gonfode on the Arabian coast, nearly opposite to Suakin, and should be in the Berlin Museum. According to Mr. Pease the species frequents places covered with long grass, and has a rapid straight flight.

Mirafra cheniana.

Mirafra cheniana, Smith, Ill. Zool. S. Afr. Aves, pl. 89, fig. 2 (1843, err. pro fig. 1) *Latakoo;* Sharpe, Cat. B. M. xiii. p. 603 (1890) *Latakoo, Whittlesea Flats;* Shelley, B. Afr. I. No. 201 (1896); Stark, Faun. S. Afr. B. i. p. 215 (1900).

Adult. Above mottled, pale rufous brown, with broad dark centres to the feathers. Wings more rufous than the back; the rufous edges on the quills extending across about half of the outer and half of the inner webs; under wing-coverts of a uniform pale cinnamon, like the inner margins of the quills. Tail blackish brown with the pale pattern white and extending on to the three outer pairs of feathers; both outer and penul

timate feathers white with a wedge-shaped blackish patch on the inner webs; next feather with a broad white outer margin. A broad eyebrow and sides of head buff mottled with brown; chin and throat white, shading into brownish buff on the sides of the upper neck, remainder of the under parts brownish buff; lower throat and crop with boldly marked angular blackish spots which unite into a patch between the crop and the sides of the neck. "Iris dark hazel; bill pale; with upper mandible dusky brown except the edges; tarsi and feet pale reddish brown." Total length 5 inches, culmen 0·4, wing 3, tail 1·8, tarsus 0·8. ♂, 6. 1. 79. Potchefstroom (T. Ayres).

The Latakoo Lark inhabits the eastern part of Cape Colony north to the Transvaal.

The type was obtained by Sir Andrew Smith, who writes: "Only a few individuals of this species were seen, and those upon the extensive grassy plains to the northward and eastward of Latakoo. It is a species which seems to prefer situations which abound in long and rank grass, among which it runs like a quail, and flies like it when disturbed, to a short distance, and then suddenly descends, after which it cannot again be got to take wing unless by the aid of dogs. It feeds upon seeds and small insects." In Cape Colony it has also been procured by Mr. Atmore on the Whittlesea Flats.

In the Transvaal, these Larks have been met with by Mr. T. Ayres, in the Marieco district, where bush and glade are pretty equally distributed. Like our English Skylark they rise in the early morning with the same fluttering flight, singing sweetly all the time. He also found them on the slopes in the open country, a mile or two from Potchefstroom.

Mirafra albicauda. (Pl. 18, fig. 2.)

Mirafra albicauda, Reichen. J. f. O. 1891, p. 223 *Gonda;* id. Vög. Deutsch. O. Afr. p. 203 (1894); Shelley, B. Afr. I. No. 214 (1896); Neum. J. f. O. 1900, p. 291 *Kavinjiro, Donje Ngai.*

Adult. Above mottled black with the edges of the feathers dull grey, partially inclining to buff on the centre of the mantle. Wings blackish brown with broad pale edges to the feathers, buff on the wing-coverts,

1 Mirafra buckleyi. 2. M. collaris.

shaded with rufous on the primary-coverts and towards the base of the secondaries and clear cinnamon on the eight inner primaries, where this colour extends half way across the outer webs; the outer two primaries are narrowly edged with rufous, which passes into buff on the second primary beyond the end of the bastard-primary; under surface of the wing with the coverts and broad inner margins of the quills extending half way across their inner webs, rufous buff; tail blackish with a strongly marked white pattern extending over the outer feather with the exception of a small wedge-shaped dusky patch on the basal half of the inner web; penultimate feather similarly coloured but with a large dusky patch reaching nearly to the end of the tail; the next feather has a white outer edge extending its whole length; eyebrows, cheeks, sides of upper half of neck and the under parts generally white, tinted with buff on the breast; ear-coverts pale brown shading into black on the hinder part; sides of the lower neck mottled with ash like the hind neck; lower throat spotted with black and separated from the sides of the lower neck by a fairly well-marked dusky black band. "Iris hazel; bill dusky; paler below; tarsi and feet horn-colour" (Hawker). Total length 5·8 inches, culmen 0·45, wing 3·25, tail 2, tarsus 0·85. ♂, 20. 11. 99. Athi R. (Delamere.)

The White-tailed Lark inhabits East Africa from the Uniamwesi country to about 9° N. lat. on the Nile.

The type was discovered by Fischer at Gonda, close to Taboro, which is the most southern-known range for the species. From further north-east Mr. Neumann procured a male at Kavinjiro, December 11, 1893, and five days later a pair at Donje Ngai. Lord Delamere has also met with it at the Athi river, and Mr. Hawker procured a fine series of three males and four females twenty miles north of Fashoda, April 12, 1901, and a specimen at Kaka on May 2.

Mirafra buckleyi. (Pl. 19, fig. 1.)

Calendrella buckleyi, Shelley, Ibis, 1873, p. 142 *Accra;* Reichen. J. f. O. 1875, p. 43 *Accra.*

Mirafra buckleyi, Sharpe, Cat. B. M. xiii. p. 599 *Accra;* Shelley, B. Afr. I. No. 197 (1896); Hartert, Nov. Zool. 1901, p. 340 *Niger.*

Type. Above mottled, crown and back of neck pale tawny brown, with rather narrow blackish shaft-stripes; mantle paler ashy brown, with large dark centres and partially defined black shaft-stripes to the feathers, lower

back nearly uniform pale brown ; upper tail-coverts cinnamon, with blackish shaft-stripes. Tail blackish brown, with broad rufous edges to the centre pair of feathers, and a rufous buff pattern on the outer two pairs, extending over two-thirds of the outer feather, the other third being a wedge-shaped blackish patch on the inner web; penultimate feather with the outer web rufous buff. Wing dark brown with buff edges to the feathers, which are slightly more rufous on the middle quills ; wing-linings dusky ash, with partial rufous buff edges to the quills, and the coverts buff like the under surface of the body. Eyebrow, sides of head, throat and sides of upper neck sandy buff, slightly paler than the breast ; cheeks and ear-coverts mottled with dark brown ; lower throat and crop with dark brown angular shaft-spots. Iris brown ; bill brown ; darker on the upper mandible and tip of lower one ; tarsi and feet brownish flesh colour. Total length 5·3 inches, culmen 0·5, wing 2·8, tail 1·9, tarsus 0·9. ♀, Accra, 2. 72 (Shelley).

Buckley's Lark inhabits the Gold Coast and the Niger district.

During my visit to the Gold Coast in company with Mr. T. E. Buckley, we discovered this species near Accra, where in February and March they were fairly abundant, and to be found singly or in pairs on the sandy plain, which is much interspersed with bushes. We never observed them to mount in the air, but when disturbed they flew rather in a Pipit-like manner for a short distance. Dr. Reichenow, however, who also found the species abundant at Accra, likens it to our Skylark in its manner of soaring in the air, and singing. According to Mr. Hartert, these Larks are not uncommon in the neighbourhood of Loko, and are to be met with northward throughout the more open country between Kashia and Saria.

Mirafra angolensis.

Mirafra angolensis, Bocage, Jorn. Lisb. 1880, pp. 59, 67 *Caconda ;* 1893, p. 14 *Galanga ;* Sharpe, Cat. B. M. xiii. p. 593 (1890) ; Shelley, B. Afr. I. No. 203 (1896) ; Hartert, Bull. B. O. C. xi. p. 64 (1901) *Caconda.*

Types. "Remarkable by the brick red colouring of the upper parts. Bill similar in size and form to that of *M. africana.* The two specimens differ

slightly, probably owing to their age; in one the crown and upper back is brick red, with narrow black shaft-stripes; these stripes almost disappear on the upper neck, which contrasts in its greyish shade from the surrounding plumage; lower back and rump uniform brick red, and the upper tail-coverts ashy, shading into brown on the centres of the feathers, and their shafts are brown. In the other specimen the upper parts are more strongly mottled with black, the dark centres to the feathers almost blending into their ashy edges. In both specimens the quills are brownish black with rufous outer webs, and the inner webs edged with pale isabelline; lores and an indistinct eyebrow dull fawn, ear-coverts of the same colour striped with brown; under parts fawn, brighter on the chest, fading into whitish on the middle of the abdomen, and into pure white on the throat; the base of the latter with a gorget of triangular brown spots; tail blackish, the centre pair of feathers with broad chestnut edges, and the outermost ones with a large triangular patch of white, extending over the outer web and a portion of the inner one; penultimate feathers with the outer web white. Bill horny brown, with the edges of the upper mandible and the base of the lower one whitish; feet pale. Total length 6·8 inches, culmen 0·68, wing 33·6, tail 2·24, tarsus 1·08" (Bocage).

The Angola Lark inhabits Benguela.

All that is known regarding this species is that the types, a male and female, were procured at Caconda and another specimen at Galanga.

According to the original description which I have translated, this species should be readily recognised by the primaries, the rufous apparently entirely crossing the outer web and the inner web being only margined with isabelline, while the pattern of the tail is similar to that of *M. cantillans* and *M. frigillaris*, in neither of which species does the rufous on the outer webs of the primaries ever entirely cross that web.

Mirafra nigrescens.

Mirafra nigrescens, Reichen. Orn. Monatsb. 1900, p. 39 *Kondeland*.

"Upper parts black, with earthy brown sides to the feathers; rump uniform grey, the shorter upper tail-coverts greyish brown, with blackish terminal shaft-stripes, the longer ones black with grey-brown sides; lores and eyebrow clearer brown; cheeks clear brown spotted with black; throat white; crop brown with black markings; breast pale brown or brownish

white, least upper wing-coverts rufous, the middle and larger ones and the primary coverts with blackish centres; quills blackish brown, the primaries with bright rufous outer edges, the secondaries with smaller rufous edges, and the inner one has a black marginal line; tail feathers blackish brown with ashy brown outer edges, the outermost one with the outer web bright yellowish brown. Total length 4·0 inches, culmen 0·72, wing 3·6, tail 2, tarsus 1·32" (Reichenow).

Reichenow's Dusky Lark inhabits German East Africa to the south of Bagamoyo.

This species is known to me only by the description of the type, which is recorded as having been procured by Dr. Fülleborn at "Eltonpass nördlich des Kondelandes."

This pass is south of Bagamoyo, between that town and Konduchi, a name, according to Keith Johnston, "given to a group of villages surrounded by cocoa-nut trees on the shores of a shallow bay. The inhabitants are described by Captain Elton as hard-working fishermen and cultivators."

Mirafra collaris. (Pl. 19, fig. 2.)

Mirafra collaris, Sharpe, Bull. B. O. C. v. p. 24 (1896) *Lake Rudolf;* Donaldson Smith, "Through Unknown African Countries," p. 126, fig. (1897).

Type. Above rich cinnamon, with broad white sides to the feathers of the mantle and inner portions of the wings; edges slightly more buff on the crown and wing-coverts; back and ides of upper neck greyish black, with broad buff edges to the feathers like the hinder part of the eyebrow, which is otherwise uniform buff; upper tail-coverts dusky grey, with whitish edges and black shafts. Tail with black shafts; these shafts, like those of the quills, have the basal portion on the under side white, centre four feathers slaty grey with broad pale rufous edges; remainder of the tail blacker, with a narrowish buff edge to the outer feather. Wings: quills, inner three secondaries excepted, dusky brownish black, with broad buff ends to most of the secondaries and a few of the inner primaries, and buff edges to the outer feathers; under wing-coverts pale cinnamon, and reaching to the end of the pale rufous patch which extends over the entire base of the quills and the basal portion of the under surface of the shafts is white. Ear-coverts rich cinnamon; cheeks buff mottled with black and surmounted by a band of black beneath the eye; chin and upper throat buff, followed by

a broad collar of black feathers edged with buff; crop and breast buff, the former with broad rich cinnamon centres to the feathers, which form a large patch of that colour on the sides next to the lower neck; flanks mottled with rufous; under tail-coverts buff, with the largest ones slaty grey edged with buff." Iris brown. Total length 6 inches, culmen 0·5, wing 3·6, tail 2·5, tarsus 0·9. The secondaries reach 0·1 beyond the end of the primaries.

The Collared-Lark inhabits Gallaland.

All that I know regarding this species, is that the type was procured by Dr. Donaldson Smith during his expedition to Lake Rudolf, and is now in the British Museum.

Genus III. PINAROCORYS.

Similar in general structure to *Mirafra*, from which it differs in the depth of the angle of the wing between the longest primary and longest secondary, the shortest secondary falling short of the tip of the wing by about 1·2 inches, or more than the length of the tarsus. This genus is further characterised by the variable pattern of the plumage in adult birds; full plumaged birds have the crown and back uniform brown; quills with or without a rufous pattern, and most of the centre ones have broad pale terminal margins, but these strongly marked variations in the colouring of the wings are neither seasonal nor specific characters, but apparently denote the sex.

KEY TO THE SPECIES.

a. Upper tail-coverts and tail blackish brown. *nigricans*.
b. Upper tail-coverts and tail cinnamon, the latter with a dark brown triangular patch on the end half . . . . . *erythropygia*.

Pinarocorys nigricans.

Alauda nigricans, Sundev. Œfv. K. Vet. Ak. Forh. Stockh. 1850, p. 99 *Upper Limpopo*.

Mirafra nigricans, Sharpe, ed. Layard's B. S. Afr. p. 530 (1884) *Humbe, Quissangues, Limpopo;* id. Cat. B. M. xiii. p. 619 (1890) *Rustenburg, Makalaka;* Shelley, B. Afr. I. No. 216 (1896); Sharpe, Ibis, 1897, p. 514 *Zulu;* Alexander, Ibis, 1899, p. 563 *Zambesi;* Starke, Faun. S. Afr. B. i. p. 207 (1900).

Adult in full plumage. Above uniform blackish brown with narrow rufous buff edges to the outer tail-feathers. Wing with incomplete narrow buff edges to the feathers; most of the secondaries and the inner primaries with broad terminal edges of rufous-shaded white. Sides of the head, sides of upper neck and the under parts generally mostly white; the greater portion of the ear-coverts and a patch in front of them, extending round the cheeks and forming a margin to the upper throat, blackish brown; sides of upper neck equally mottled with white and blackish brown; lower throat and crop with large blackish brown centres to the feathers and the middle of the chest with more lanceolate blackish centres; flanks washed with blackish brown. Under surface of the wings dusky black, with large buff marginal patches on the inner webs of the primaries; under wing-coverts white, slightly mottled with dusky black. "Iris hazel; bill dusky with base of under mandible pale; tarsi and feet yellowish white" (T. Ayres). Total length 7·4 inches, culmen 0·6, wing 4·7, tail 3·2, tarsus 1·15. Rhodesia (Bradshaw).

Adult before the autumn moult. Above rufous shaded earthy brown, mottled on the crown and upper back with a few new blackish feathers. Wing: above nearly uniform brown with narrow margins to the feathers of cinnamon, which colour extends nearly half way across the outer webs of the primaries and over a large portion of the inner webs; under wing-coverts buff. Remainder of the plumage as in the last bird described; but the dark parts are slightly paler brown. Total length 7·4 inches, culmen 0·6, wing 4·5, tail 3, tarsus 1·15. ♂, 10. 1. 85. Potchefstroom (T. Ayres).

Immature male. Above blackish brown with rufous buff edges to all the feathers; wing-coverts more broadly edged, and the secondaries as well as the inner primaries have broad rufous tinted white terminal margins; under surface of the wing dusky slate colour with the outermost coverts sandy buff, and a buff patch on the inner margins of the quills; tail uniform blackish brown, all the feathers narrowly edged with cinnamon; remainder of plumage as in the adult. Total length 7·3 inches, culmen 0·6, wing 4·6, tail 3, tarsus 1·15. ♂, 10. 1. 82. Rustenburg (T. Ayres).

The Dusky Lark inhabits Benguela and South Zambesia from Zululand to the Zambesi river.

Although this species has a fairly wide range, it appears to be rare everywhere. Professor Barboza du Bocage records only two specimens as having been collected by Anchieta in Benguela; one from Humbe, the other from Quillengues, where it is called by the natives "Kenibange."

The most southern known range for the species is Ulundi,

in Zululand, 28° 30′ S. lat., 31° 30′ E. long.; here, the Messrs. Woodward procured a single specimen. According to Dr. Stark, the species is "not uncommon in the Transvaal near Potchefstroom and Rustenburg." Two specimens from that district were collected by Mr. T. Ayres, who writes: "Stomach contained locusts. This, to me, exceedingly scarce bird, was shot amongst the hills to the north of Rustenburg, within six miles of the Crocodile river, it was a solitary bird, running on some flat rocks with much sheltering scrub about, and very Pipit-like in its appearance and manners." On the same day of the same month, but three years later, he again procured a specimen (January 10, 1885), and writes: "This is the second specimen of *M. nigricans* which I have met with. I found it amongst the scrubby bush on a rocky range of hills, some couple of miles from the banks of the Mooi river, and about twenty from the sources of that stream. My attention was attracted to the bird by its large size, dipping flight, and Pipit-like appearance." The type of the species possibly came from this neighbourhood, as it was discovered by Wahlberg in the Upper Limpopo district.

To the north of the Limpopo, Bradshaw obtained a specimen which is now in the British Museum, labelled "Makalaka country." On the left bank of the Zambesi, near the mouth of the Kafue river, in about 29° E. long., Mr. Boyd Alexander met with three of these birds together on December 26, consisting of two males and a female. They "frequented open land where the trees had been felled by the natives, and the ground sown with grain. The feathers of the mantle of these three individuals have almost lost their pale edgings."

Pinarocorys erythropygia.

Alauda erythropygia, Strickl. P. Z. S. 1850, p. 219, pl. 24 *Kordofan*.
Mirafra erythropygia, Sharpe, Cat. B. M. xiii. p. 619 (1890) *Kordofan*; Reichen. J. f. O. 1891, p. 390; 1897, p. 43 *Togo*; Shelley, B. Afr. I. No. 217 (1896); Hartert, Nov. Zool. 1899, p. 414 *Gambaga*.

Adults. Similar in plumage to *N. nigricans*, and generally have pale terminal margins to the secondaries and inner primaries, but differ as follows: upper tail-coverts and tail bright cinnamon, the latter with a dark brown triangular patch, with the apex at the middle of the centre feathers, and the base at the end of the tail; the dark marks on the crop rarely extend on to the chest. Total length 7 inches, culmen 0·6, wing 4·1, tail 2·9, tarsus 1·0.

In three specimens labelled "♂, May, Renk Soudan; ♀, juv.? Kordofan, and ♀, May, Wagara," the outer edges of the quills are narrowly edged with buff and their inner webs are nearly of one shade of brown, the pale portion being almost obsolete. In four other specimens labelled "♀, May, Mouth of Zeraf River, and ♂ ♂ ♀, May, Wagara," the primaries have nearly the whole of the outer web, and the greater portion of the inner web cinnamon, of the same shade as the upper tail-coverts.

The Rufous-tailed Bush-Lark inhabits Tropical Africa between 5° and 15° N. lat., and 5° W. and 35° E. long.

Inland from the Gold Coast Captain W. Giffard shot a specimen at Gambaga, and the species has been met with in Togoland, by both Dr. Buttner and Mr. Baumann. The type, an immature bird now in the British Museum, was obtained by Petherick in Kordofan. In this district, but on the east bank of the Nile, in Renk Soudan, Mr. R. M. Hawker once met with a large scattered flock of these Larks, and procured an adult male. They were very shy, and on being disturbed flew into the trees. Further south, Heuglin met with these Larks in the Bongo and Wau countries, feeding near cattle or perched on the ant-hills; but they were apparently very rare or shy, as he seems never to have procured a male specimen, and describes the female as *Alauda infuscata*, believing it to be distinct from *Alauda erythropygia*, Strickl.

Genus IV. PYRRHULAUDA.

Very similar in size and form to *Calendrella*, but distinguished by the large bastard-primary, and the axillaries and most of the under wing-coverts being black. Sexes very dissimilar in plumage; the adult males with a large portion of the head and the entire throat black or chestnut; ear-coverts either uniform black or white; females with no black on the head or throat. Bill short and stout; nostrils hidden by stiff bristly plumelets; no crest; bastard-primary reaching to about the end of the primary-coverts; outer margin of the first long primary brown; longest secondary reaches about to the tip of the wing and the shortest one falls short of the end of the wing by about the length of the tarsus; feet rather small, with the hind claw slightly curved and about the same length as the hind toe.

	Type.
Pyrrhulauda, Smith, Ill. Zool. S. Afr. Av. pl. 24 (1839). .	P. australis.

KEY TO THE SPECIES.

a. Portion of head and the entire throat uniform black or chocolate-brown	*adult males.*
a^1. Bill smaller; entire head and breast black.	*australis.*
b^1. Bill larger; ear-coverts white.	
a^2. Back with no cinnamon colour.	
a^3. Crown brown like the back	*leucoparæa.*
b^3. Crown not like the back.	
a^4. Forehead white.	
a^5. Some black feathers on the hind neck	*frontalis.*
b^5. No black feathers on the hind neck	*nigriceps.*
b^4. No white on forehead, but a large patch of white on the crown.	
c^5. Dark portion of head and throat black	*verticalis.*
d^5. Dark portion of head and throat chocolate brown	*signata.*
b^2. Back cinnamon.	
c^3. A large portion of the lesser wing-coverts black	*leucotis.*
d^3. No black on the lesser wing-coverts, which are mostly white	*melanocephala.*
b. Throat buff, sometimes mottled with black. .	*females and immature males.*

Pyrrhulauda australis.

Megalotis australis, Smith, Rep. Exped. C. Afr. App. p. 49 (1836) *Orange R.*

Pyrrhulauda australis, Chapman, Trav. S. Afr. p. 400 (1868) *Damara*, Ayres, Ibis, 1871, p. 258 *Transvaal;* Sharpe, Cat. B. M. xiii. p. 651 (1890); Kuschel, J. f. O. 1895, p. 344 *egg;* Shelley, B. Afr. I. No. 229 (1896); Nehrkorn, Kat. Eiers. p. 135 (1899) *egg;* Stark, Faun. S. Afr. B. i. p. 194 (1900).

Pyrrhulauda melanosoma, Swains. Classif. B. ii. p. 294 (1837).

Type. Entire head and neck black, with partial brown edges to the feathers of the nape and hind neck; back, wing-coverts and inner secondaries dark brown, with rather indistinctly defined broad paler edges, which colour predominates on the lower back; quills, upper tail-coverts and tail uniform brownish black, with the centre tail-feathers slightly paler and with broad brown margins. Under surface of wing and body uniform dull black. "Irides dark brown; bill light horn colour, darker above; tarsi and feet flesh colour" (Andersson). Total length 4·4 inches, culmen 0·4, wing 3·1, tail 1·7, tarsus 0·6. ♂, Orange R. (A. Smith).

Female. Above dusky brown; head and neck streaked with brownish buff margins to the feathers, more narrowly so on the back and scapulars and very broadly on the upper tail-coverts; wing-coverts with more sharply defined edges than the other feathers of the wings; tail blackish brown, with the centre pair of feathers paler and inclining to rufous buff on the edges of the basal parts; outermost feathers fading into dusky white towards the external terminal half; penultimate feathers with narrow partial white edges; under surface of quills ashy brown with partial buff inner margins; axillaries and under wing-coverts brownish-black, the latter with a broad buff outer margin; sides of head buff with broad blackish streaks on the ear-coverts; throat and under surface of body sandy buff with a large blackish brown patch down the centre of the body and over the tail-coverts. "Iris dark hazel; bill ashy; tarsi and feet pale brown" (W. Lucas). Total length 4·8 inches, culmen 0·4, wing 3, tail 1·7, tarsus 0·65. ♀, 10. 12. 81. Rustenburg (W. Lucas).

The Black-eared Sparrow-Lark ranges from Damara through Northern and Eastern Cape Colony into Natal and the Transvaal.

According to Andersson, this species is not uncommon in Damara and Great Namaqualand, where it occurs in small flocks during the rainy season. Sir Andrew Smith, who dis-

covered the type, observes that it extends further south than *P. verticalis*, is gregarious, and flocks of several hundreds are often to be seen upon the plains bordering the Orange river. In its action in the air it resembles the other Larks, and like them constructs its nest upon the ground under the shelter of a tuft of grass or some dwarf shrub. Layard informs us that the species was plentiful in the country round King-williamstown, Colesberg, and on a limited tract of country near Nel's Poort, Beaufort.

From the Transvaal, there is a specimen in the British Museum obtained by Mr. W. Lucas. Mr. T. Ayres states that he found two nests of this species—one in March, near the Hartz river, and the other in April near Bloenhoff, on a tributary of the Vaal, and that each contained two eggs, which in one instance were somewhat incubated. "The nest of this species," he writes: "is placed on the ground under shelter of a clump of reed or grass. It is roughly constructed of coarse grass, slightly lined with fine roots; both the nests which I found were situated within twenty yards of water. The egg is white, much spotted with sepia brown."

Mr. Nehrkorn describes the egg as having a grey or greyish green ground, with evenly distributed spots of pale violet and greyish yellow, and measures 0·72 by 0·52.

Pyrrhulauda leucoparæa.

Coraphites leucopareia, Fisch. and Reichen. J. f. O. 1884, p. 55 *Arusha.*
Pyrrhulauda leucoparæa, Sharpe, Cat. B. M. xiii. p. 651 (1890); Reichen. J. f. O. 1891, p. 159 *Mapapwa, Taboro;* Hartl. Abhandl. Brem. 1891, p. 18 *Usongo, Usambiro;* Reichen. Vög. Deutsch. O. Afr. p. 204 (1894) *Masai, Igonda, Usukuma;* Kuschel, J. f. O. 1895, p. 344 *egg;* Shelley, B. Afr. I. No. 230 (1896); Hinde, Ibis, 1898, p. 579 *Machacho's;* Jackson, Ibis, 1899, p. 625 *Njemps;* Nehrkorn, Kat. Eiers. p. 135 (1899) *egg;* Neum. J. f. O. 1900, p. 291 *Lelela;* Hinde, Ibis, 1900, p. 494, *Athi R.*

Adult male. Crown, back and scapulars ashy brown, with broad blackish centres to the feathers, upper tail-coverts whiter; forehead and hind neck more uniform and with a slight rusty shade; wings dusky brown, with pale rufous tinted buff edges to the feathers, broadest on the coverts and inner secondaries; under surface of quills with partial rufous buff inner edges; axillaries and under wing-coverts black; tail-feathers dusky black with pale ashy brown edges, the external one fading into dusky white on the outer web and towards the end. Ear-coverts white; a broad eyebrow, fore part of face, throat, upper half of sides of neck, a narrow partition down the centre of the breast and the under tail-coverts, dull black; sides of crop and breast and the thighs white, with the flanks greyish and very indistinctly streaked. "Iris brown, bill and legs slate colour." Total length 4·8 inches, culmen 0·4, wing 3·1, tail 1·7, tarsus 0·65. ♂, 16. 11. 99. Athi R. (Delamere).

Adult female. Differs in having the ear-coverts broadly streaked with brown, the eyebrow, front of face, sides of head and neck whitish, and the throat towards the crop with rather obscure dark spots. Total length 4·4 inches, culmen 0·4, wing 2·9, tail 1·6, tarsus 0·6. ♀, 15. 11. 99. Athi R. (Delamere).

Fischer's Sparrow-Lark inhabits East Africa between 7° S. lat. and the Equator.

The most southern range, known to me, for this Lark is Ugogo, where Emin found the species abundant and collected several specimens in Usongo and Usambiro. Fischer calls it a common species in Arusha, to be met with in pairs or small flocks, and he found a nest placed on the ground between a tuft of grass and the stump of a bush, containing two eggs of a pale ashy brown colour, thickly spotted with violet grey and brown, chiefly towards the thick end, and measured 0·65 × 0·52 inch. He procured the type of the species in Masailand at Nguruman in June, and others at Wambi and Kagehi. Mr. Oscar Neumann has collected specimens at Lalela, to the north of Majara lake, and observed it at Umbagne and Donja Nai. Mr. Jackson has met with this species at Machacho's in March and at Njemps in September, at which latter season they were in pairs in the open sandy plains. Dr. S. L. Hindehas found the species in June, August

and September, at Machacho's and along the Athi river and writes: "Seen in flocks at dusk, on old camp-grounds, roads, or grassy plains." At the Athi river, Lord Delamere collected a fine series in October, November and February.

Pyrrhulauda frontalis.

Pyrrhulauda frontalis, Bp. Consp. i. p. 512 (1850) *Nubia;* Hartert, Kat. Vög. Mus. Senck. p. 41 (1891) *Kordofan.*

Coraphites frontalis, Oust. Faun. and Flor. Comalis, Ois, p. 11 (1882) *Somali.*

Coraphites melanauchen, Cab. Mus. Hein. i. p. 124 (1850).

Pyrrhulauda melanauchen, Sharpe, Cat. B. M. xiii. p. 655 (1890) *Socotra, Abyssinia, S. Asia;* id. P. Z. S. 1895, p. 472 *Somali;* Shelley, B. Afr. I. No. 231 (1896); Cholmley, Ibis, 1897, p. 206 *Suakin;* Witherby, Ibis, 1901, p. 245 *Khartoum;* Grant, *t. c.* p. 286 *Zeila;* Sharpe, P. Z. S. 1901, p. 303 *Somali;* Grant, Ibis, 1901, p. 630 *Somali.*

Coraphites albifrons, Sundev. Œfv. K. Vet. Ak. Förh. Stockh. 1850, p. 127.

Pyrrhulauda affinis and sincipitalis, Blyth, Ibis, 1867, p. 185 *India.*

Adult male. Head and neck black, with the forehead, ear-coverts, and a band below the nape white; back and scapulars pale sandy brown with a few faintly marked dark shaft-stripes. Wing above dark brown with sandy buff edges to all the feathers, broadest on the coverts and inner secondaries; under surface dusky ash with partial buff inner edges to the quills and the coverts black. Tail blackish brown with the centre feathers paler and broadly edged with light sandy brown, and about half of the outer feather dusky white. Throat and under surface of body black with a large patch of white on the sides of the crop, some white on the flanks and the outside of the thighs mottled with that colour. "Iris dark brown; bill bluish white; tarsi and feet greenish white" (Witherby). Total length 4·6 inches, culmen 0·4, wing 3·0, tail 2·0, tarsus 0·65. ♂, 26. 1. 68. Zoulla (Blanford).

Adult female. Above pale sandy brown with a few dark shaft-stripes on the crown; back, wings and tail as in the males, only the axillaries and under wing-coverts more dusky and the latter have a broad outer band of buff; sides of head buff with pale brown shaft-stripes to the ear-coverts; throat white; under surface of body buff with a few brown shaft-stripes on the crop. Total length 4·3 inches, wing 2·9, tail 1·8. ♀, 25. 1. 86. Zoulla (Blanford).

The White-fronted Sparrow-Lark inhabits North-east Africa from Somaliland to the Tropic of Cancer and ranges eastward to India.

The most southern known range for the species is about 10° N. lat., or the neighbourhood of Berbera in North Somaliland; here specimens have been collected by M. Revoil and Dr. Donaldson Smith. Between Manda and Zaila Mr. A. E. Pease found them breeding in great numbers, in March. On the opposite coast, near Aden, it has been met with by Lieut. H. E. Barnes and Mr. Hawker, and is apparently abundant along both shores of the southern half of the Red Sea, for Rüppell records it from Arabia. On Socotra, Prof. Balfour found these Larks very common on the low-lying plains on both sides of the island, and remarks that they have a wailing note, which is to be heard at daybreak, and the last sound at night. Along the African coast of the Red Sea Heuglin generally met with it in pairs and found it on the island of Dahlac. Mr. Cholmley shot two specimens at Berenice and Mr. Blanford collected others at Anneley Bay in January, at Massowa and Amba on the Samhar coast in August, and considered them to be extremely abundant in all the sandy country near the coast. They rarely if ever perched on bushes, several keeping about one spot, but did not exactly associate in flocks, and when disturbed rose one after the other, not simultaneously, but flying off without keeping close to each other.

At the Fifth Cataract of the Nile Galton procured a specimen which is in the British Museum, and in Rüppell's collection there is an example from Kordofan, its most western known range. Along the Nile, above Khartoum, Mr. H. F. Witherby found these Larks plentiful, in small companies, on the grassy flats as well as among the bushes in the sandy districts, crouching in parties of five or six in the shade.

Pyrrhulauda nigriceps.

They allowed a near approach, and then almost invariably took a short flight to the shade of some other bush.

This species was described under three different names in the year 1850, first as *P. frontalis*, Bp. Cabanis wrongly refers this title to *P. nigriceps*, Gould, the species next above his *Coraphites melanauchen*, showing that Bonaparte's name has priority, and in neither work is *Coraphites albifrons*, Sundev., quoted; therefore this name was apparently the third in order of priority.

Pyrrhulauda nigriceps. (Pl. 20.)

Pyrrhulauda nigriceps, Gould, Voy. Beagle, B. p. 87 (1841) *Cape Verde Is.*; Sharpe, Cat. B. M. xiii. p. 650 (1890); Alexander, Ibis, 1898, pp. 85, 112, 116, 283; Bocage, Jorn. Lisboa, 1898, p. 146; Salvad. Ann. Mus. Genov. 1899, p. 295 *Cape Verde Is.*

Pyrrhulauda leucotis (nec Stanley), Bocage, Jorn. Lisboa, 1867, p. 142 *Cape Verde Is.*

Adult male. Similar to *P. frontalis*, but differs in having more white on the head and no black on the back of the neck. A broad crescent-shaped patch of black on the hinder half of the crown is connected by a band through the eye to the black lores and cheek; chin, throat and sides of neck black, like the breast and under tail-coverts; remainder of the head and neck white, shading gradually into buffy brown on the back, which latter is slightly mottled with dark brown centres to the feathers; lesser wing-coverts like the back; remainder of the feathers of the wing brown, with narrower brownish buff edges, and the under wing-coverts black; tail blackish brown, with the centre feathers and the edges of the others paler; under parts uniform black, with a pale patch on each side of the crop, and the thighs buff. Iris dark hazel, bill light bluish horn colour, legs and claws flesh colour. Total length, 4·8 inches, culmen 0·45, wing 3, tail 1·6, tarsus 0·6. ♂, 2. 97. St. Jago (Alexander).

Adult female. Differs from the male in the black of the plumage being confined to the axillaries and under wing-coverts; the top of the head and back of the neck isabelline, with some angular brown centres to the feathers, and the upper tail-coverts uniform buff; sides of head and the under parts generally uniform buff shaded with isabelline on the ear-coverts and crop; more buff on the tail, which colour extends over the entire outer web and end of the outer feather. Total length 5·2 inches, culmen 0·4, wing 3, tail 1·8, tarsus 0·6. ♀, 2. 97. St. Jago (Alexander).

The Cape Verde Sparrow-Lark is confined to the group of islands of that name.

The type was discovered during a voyage of H.M.S. "Beagle," at the Cape Verde islands. Dr. Dohrn found this Lark on St. Jago, where it is, according to Captain Boyd Alexander, "locally distributed on the island, and becoming less plentiful in its northern portion. It frequents the stretches of the higher plain-levels near the coast, in flocks that vary greatly in size. On one occasion we saw as many as sixty birds together. In these flocks there is a great percentage of females. To discover the presence of these birds puzzled us considerably at times. On the approach of footsteps they emit a faint, piping, ventriloquial note, like that of a young chicken, as they sit crouched together among the stones; and their plumage being much like the colour of the soil, it is almost next to impossible to discover them. They generally sit very close, and resort to flight only when absolutely obliged, then rising up close to one's feet to fly a few hundred yards ahead, and alighting again. The male has rather a pleasing little song, but somewhat monotonous; it is uttered on the wing, and sometimes, but not often, on the topmost twig of a tree. When singing on the wing the bird rises in concentric circles, with a very jerky Pipit-like flight, up to a height of not more than thirty feet, and then hangs in the air for a few seconds, after which it stops its song, and with wings closed, drops to the ground again. Their chief food is grass-seed, and throughout the day the birds keep moving from one feeding-ground to another. In February we found them moulting, the plumage of the majority being in a poor state." He adds: "Breeding commences at the beginning of October. Flat stone-covered places near the sea are the favourite resorts, the birds breeding together in large societies. The nests are extremely difficult to discover. If you stand still, the male

birds will now and again proclaim their presence by rising up from the ground and indulging in their jerky little songs; but to passers-by they never betray themselves, sitting close the whole time, and creeping very often under some large stones. There is little variation in the song, which might be expressed by the words 'All alive ho!' constantly repeated. While on Boavista we were fortunate to frighten a male off his nest, containing two eggs, which were well incubated. The nest, composed of a little dead grass, was placed underneath a large stone. The eggs are a dirty white in ground colour, evenly spotted and blotched all over with light brown, and with minute underlying spots of purplish grey; they measure 0·8 × 0·59." At Boavista he found them more numerous than on any other island. They used to get up close at his feet in clouds and fly forward a few feet above the ground. Mr. Leonardo Fea also met with the species on this island and Mr. Feijo procured specimens on Santo Antao, so we may presume that it inhabits all the islands of the Cape Verde group.

Pyrrhulauda verticalis.

Megalotis verticalis, Smith, Rep. Exped. C. Afr., p. 48 (1836) *Orange R.*
Pyrrhulauda verticalis, Sousa, Jorn. Lisb. 1889, p. 115 *Catumbella;* Sharpe, Cat. B. M. xiii. p. 656 (1890) *Damara, Cape Col. Transvaal;* Fleck, J. f. O. 1894, p. 411 *Damara;* Shelley, B. Afr. I. No. 232 (1896); Stark, Faun. S. Afr. B. i. p. 195 (1900).

Adult male. Head and neck black, with the ear-coverts, forehead, a patch on the centre of the back half of the crown and a band below the nape, white; back and scapulars nearly uniform brown varying in shade from sandy buff to dark brown, with a few faintly marked dark shaft-stripes. Wing: above dark brown with sandy buff edges to all the feathers, broadest on the coverts and inner secondaries; under surface of quills dusky ash with buff partial inner edges; under wing-coverts black. Tail blackish brown with the centre feathers paler, and broadly edged with light sandy brown, and about half of the outer pair of feathers dusky white. Throat and under

surface of the body black with a large patch of white on the side of the crop; thighs white and some white on the flanks. "Iris dark brown; tarsi and feet purplish flesh colour" (Andersson). Total length 4·6 inches, culmen 0·45, wing 3·1, tail 1·7, tarsus 0·65. ♂, 6. 11. 66 (Andersson).

Adult female. Above pale sandy brown, with a few dark shaft-stripes on the crown; back, wings and tail as in the males; only the axillaries and under wing-coverts are more dusky and the latter have a broad outer band of buff, sides of head buff, with broad pale brown shaft-stripes to the ear-coverts; throat white; under surface of body buff, with a few brown shaft-stripes.

The Grey-backed Sparrow-Lark inhabits Africa south from the Loango Coast and the Limpopo river.

The most northern known range for this species is the Loango Coast, just north of the Congo, where Lucan and Petit obtained a specimen. It has not yet been recorded from the Congo or Angola, but in Benguela to the south of the Quanza river specimens have been collected by Toulson and Furtado d'Antas, and more recently Anchieta has found the species abundant at Catumbella.

To the south of the Cunene, according to Andersson, "This species is pretty commonly diffused over Damara and Great Namaqualand, especially in the latter country, and I generally observed it abundant in the rainy season at Otjimbinque during my residence there. It congregates in large flocks, and is always found on the ground, unless disturbed, when it flies but a short distance before it again alights, scattering widely amongst the grass in search of its food, which consists almost entirely of seeds. Its flight is undulating, and occasionally an individual may be seen to soar above the rest, descending again very abruptly; it may sometimes be heard to utter a shrill chirping cry."

Sir Andrew Smith discovered the type at the Orange river, and found these Larks inhabiting both sides of that water-course, and writes: "This species, like *Pyrrhulauda australis*, inhabits the extensive arid plains of the more

southern districts of South Africa, and, like it, congregates in large flocks. When feeding, the numerous members of these flocks are widely scattered; but the moment one individual takes to flight from alarm, all the others follow the example, and they move off in a body to another locality. It is not their custom to fly far before they come to a halt, and the instant they reach the ground they scatter in all directions, and run to and fro with great rapidity. When flying they pursue a slightly undulating course, and on these occasions they frequently utter cries similar to what they do when running upon the ground, and which consists of a shrill prolonged chirp." Mr. Ortlepp informs us that they are plentiful near Colesberg, and, when the breeding season is over, they are to be found on most of the extensive plains of the neighbourhood, in large flocks. According to Stark: "About the middle of August the flocks break up and the birds separate in pairs, and about a month later commence to build their nests. Some slight hollow is chosen by the side of a tuft of grass; this is lined with fine dry grass, to which a few horse-hairs are occasionally added; and in this slight nest two or three eggs are laid. These are of a pale cream colour or dull white, somewhat thickly spotted all over with two shades of pale umber brown. They average 0·80 × 0·65."

The British Museum contains a specimen from Griqualand and two collected by W. Lucas, at Rustenberg, in December.

Pyrrhulauda signata.

Pyrrhulauda signata, Oust. Bibl. Ec. haut. Etudes, xxxi. art. x. p. 9 (1886) *Somali;* Sharpe, Cat. B. M. xiii. p. 651, note (1890).

Pyrrhulauda harrisoni, Grant, Ibis, 1901, p. 286, pl. 7 *Lake Rudolf.*

Adult male. Most nearly allied to *P. verticalis*, with a large patch of white on the crown, and the white ear-coverts connected by a broad white

band round the hind neck, but differing mostly in the dark parts of the head and the throat, being chocolate brown with a narrow black edging next to the white of the crown and fore-part of ear-coverts. Lower hind neck black, very slightly mottled with chocolate brown; back uniform pale brown with a few obsolete dark angular shaft-streaks, and the rump and upper tail-coverts slightly greyer; wings dark brown with pale edges to all the feathers; tail with the centre feathers dark brown with paler edges, and the other feathers brownish black with a wedge of white on the outer feather, broadest at the end and covering about one-third of the latter. The chocolate brown of the throat ends in a point and is followed on by a broad band of black down the centre of the body, which includes the under tail-coverts; sides of body white slightly shaded with dusky ash on the flanks; greater portion of the under wing-coverts black, the end feathers being brown like the quills, which latter have buff inner margins. Total length 4·6 inches, culmen 0·4, wing 3·0, tail 1·75, tarsus 0·65. ♂, 21. 4. 1900. Lake Rudolf (Harrison).

Female. Above uniform dark ashy brown; wings rather darker with pale edges to the feathers of the same shade as the back; a partially defined whiter hind neck; sides of the head and neck, and the under parts buffy white with the ear-coverts mostly dark brown; throat slightly mottled with rufous buff; flanks strongly washed with brown; a broad black band down the centre of the breast; under tail-coverts, axillaries and most of the under wing-coverts black. Total length 4·7 inches, culmen 0·4, wing 3·0, tail 1·7, tarsus 0·65. ♀, 21. 4. 1900. Lake Rudolf (Harrison).

The Chestnut-headed Sparrow-Lark inhabits the Somali district westward to Lake Rudolf.

The type was procured in Somaliland by M. Révoil and little is known regarding this form, which has been recently met with by Mr. J. J. Harrison at the south end of Lake Rudolf, April 21, 1900, when a pair were procured and are now in the British Museum. These are the types of *P. harrisoni*, which have been badly figured, Ibis, 1901, pl. 7.

Pyrrhulauda leucotis.

Loxia leucotis, Stanley, in Salt's Trav. Abyss. App. p. 60 (1814) *Abyssinia.*

Pyrrhulauda leucotis, Fisch. J. f. O. 1885, p. 137 *Melinda, Wapokomo;* Reichen. J. f. O. 1887, p. 73 *Ndutian;* Sharpe, Cat. B. M. xiii. p. 657 (1890) *Kudurma, Redjaf, Soudan, Samhar;* Hartert, Kat. Vög. Mus. Senck. p. 41 (1891) *Shendy;* Shelley, B. Afr. I. No. 233

(1896); Grant, Ibis, 1900, p. 139 *Kassim R.*; Emin, J. f. O. 1891, p. 60 *Tabora;* Witherby, Ibis, 1901, p. 245 *Khartoum;* Grant and Reid, Ibis, 1891, p. 629 *S. Abyssinia.*

Pyrrhulauda smithii, Bp. Consp. i. p. 512 (1850) *S. Afr.;* Sharpe, Cat. B. M. xiii. p. 658 (1890) *Damaraland, Transvaal. Zambesi, Ugogo, Manda Is.;* Reichen. J. f. O. 1891, p. 159 *Tabora;* id. Vög. D. O. Afr. p. 204 (1894) *Ndutian;* Shelley, B. Afr. I. No. 234 (1896); Alexander, Ibis, 1899, p. 564 *Zambesi;* Stark, Faun. S. Afr. B. i. p. 196 (1900); Sclat. P. Z. S. 1900, p. 2 *Katunga.*

Pyrrhulauda leucotis smithi, Hartert, Nov. Zool. 1898, p. 72 *Nyasa.*

Adult male. Head and neck jet black with the ear-coverts and a band across the hind neck pure white; upper back and scapulars cinnamon, slightly mottled with partial buff edges to some of the feathers; lower back and upper tail-coverts buff, slightly shaded with ashy grey towards the centres of the feathers. Wing: with the lesser series of coverts black and the least ones whitish; median and greater coverts cinnamon like the back but with broad buff edges; quills dusky brown with some pale rufous edging to the feathers, much broader on the inner secondaries; under wing-coverts black, under surface of quills dusky brown with broad partial pale rufous buff inner edges. Tail blackish brown, the centre feathers with broad pale rufous shaded edges and the outer ones fade into dusky white on the outer webs and towards their ends. Throat and under surface of body black with a white and chestnut patch on the sides of the crop, and the flanks and thighs whitish. "Iris hazel, bill ashy white, tarsi and feet ash colour" (Stark). Total length 4·4, culmen 0·4, wing 2·9, tail 1·9, tarsus 0·68.

Female. Differs in having no black on the head, the crown being like the mantle and the ear-coverts pale brown streaked with buff. Under parts buff thickly mottled with black down the throat and centre of breast; axillaries and most of the under wing-coverts black. Total length 4·7 inches, culmen 0·4, wing 3·05, tail 1·9, tarsus 0·65. ♂, ♀, 1. 7. 68. Asoos (Blanford).

Immature. Differs greatly from the adult; the portions which are uniform black in the adult males, are mottled with pale edges to the feathers, the ear-coverts are black or mottled with black, and the mantle is mostly black, with margins of buff or cinnamon to the feathers.

The Common Chestnut-backed Sparrow-Lark ranges over South Africa generally, northward into Damaraland on the west and over the eastern half of Tropical Africa.

In Damaraland, according to Chapman, this is the least abundant of the allied species. In the British Museum there is one specimen from this country procured by Andersson,

who writes: "I have observed this species very sparingly in Damaraland and also to the northward, but not in Great Namaqualand; it is seen in small flocks, which frequent the ground in open localities covered with grass and scanty dwarf vegetation, amongst which they run with great rapidity, taking flight for a short distance only when disturbed."

Sir Andrew Smith wrote: "The few specimens we obtained were killed upon plains thinly covered with dwarf shrubs, near the Tropic of Capricorn. Their flight, when occasioned by fear, was usually but short, and they were never seen to alight upon anything but the ground, along which they ran with great rapidity, and then proceeded to collect their food." Mr. Ortlepp found the species near Colesberg in flocks of five to ten, feeding on grass seeds.

In the Transvaal a specimen has been obtained by Mr. W. Lucas at Rustenburg in April, and Mr. T. Ayres "found these birds frequenting the open glades along the banks of the Limpopo, in companies consisting of sometimes as many as fifty individuals." Further north, at Mangwato, in December, this was the commonest of the Larks, found in small flocks, scattered all over the plains and more especially about the caffer-corn fields, but appeared to be very local. In the British Museum there are several specimens from Tete on the Zambesi, and Mr. Boyd Alexander also met with the species here and further up the river at Zumbo and in the vicinity of the Kafue river, and writes: "It frequents flat portions of stony ground. In the breeding-season the male sings on the wing, rising vertically up from the ground, and descending to earth again with hardly a beat of the wings. The call-note, uttered on the ground, is a ventriloquial pipe.

"Living in colonies, these birds are continually shifting from one locality to another, according to the supply of food. At Zumbo they suddenly appeared on December 13, when the

grain had just been sown. The food consists chiefly of grass-seed." The species has been met with at Fort Johnston, in the Shiré highlands by Dr. Rendall, and Mr. Alfred Sharpe has obtained a specimen at Katunga to the west of Lake Nyasa. In the Uniamwesi country Emin procured the species at Tabora, and Fischer collected specimens from further north, at Ndutian in Masailand, at Melinda on the coast, and in Wapokomoland on the left bank of the Tana river.

In the British Museum there are specimens from Manda Island, and from the Kassim river in Southern Abyssinia, which agree in every detail with specimens from the Transvaal and Zambesi district. I have not, however, yet seen the species recorded from Somaliland. Antinori procured two of these Larks at Daimbe in Adda Gallaland, where he considered them to be scarce, while Ragazzi, who collected the same number at Cialalaka, records them as common in that district, but probably more so at Assab. Specimens have also been obtained by Mr. Pease at Mallabella and Balchi in South Abyssinia.

The type of *Loxia leucotis*, Stanley, was procured by Salt in Abyssinia, probably in the northern part; and *Pyrrhulauda smithi*, Bp., was founded on Smith's Ill. B. S. Afr. pl. 26. I can find no definable character for distinguishing these forms. The latter have generally, but not always, a trifle more black on the lesser wing-coverts, and the wing and bill slightly larger on an average: wing, 3·0 to 3·4 inches; culmen, 0·4 to 0·45—this would include specimens from Manda Island and S. Abyssinia. In the British Museum there is a pair of Mr. Blanford's specimens from Asoos on the Samhar coast, and others from Nubia, the Soudan, Redjaf and Kudurma, and, according to Heuglin, the species ranges southward and westward from north-east Kordofan and the Red Sea, being abundant in Nubia and southward along the

Nile valley. In Abyssinia he found these Larks most plentiful in the highlands of Telemt, between Tigré and Semien, at an elevation of 8,000 feet, and in January and November met with them frequenting the sandy deserts between the forests in the Gazelle river district. They were generally in parties of three to six together on the barren soil, but never far from water. Ruppell's collection contains a pair from Shendy on the Nile below Khartoum. Above Khartoum Mr. H. F. Witherby found these Larks less numerous than *P. frontalis*, with which they associated, and writes: "On May 11 we found a nest of this species in a small scooped-out hollow in the caked mud amongst some very short burnt-up grass near the river. The nest, which was sheltered by a large lump of mud, was a small shallow 'cup' composed of dry grass and two or three bits of cotton. Round the 'cup' was a compact and neatly-arranged layer of particles of mud, perhaps made by the birds during the formation of the hollow in the caked ground. The nest contained one egg, from which the female flew on our approach." Mr. Hawker has procured three specimens during his journey up the Nile, about twenty miles north of Fashoda, including two young birds, from which I have taken my description of the immature plumage of this Lark.

Pyrrhulauda melanocephala.

Alauda melanocephala, Licht. Verz. Doubl. p. 28 (1823) *Nubia, Senegambia.*

Pyrrhulauda melanocephala, Hartert, Nov. Zool. 1901, p. 340 *Niger;* Rothschild & Wollaston, Ibis, 1902, p. 8 *Shendy;* Alexander, *t.c.* p. 293 *Gold Coast*

Fringilla otoleuca, Temm. Pl. Col. iii. pl. 269, figs. 2, 3 (1824) *N. E. Afr.*

Pyrrhulauda leucotis (nec Stanl.), Hartl. Orn. W. Afr. p. 154 (1857) *Senegambia;* Bouvier, Cat. Ois. Marche, &c. p. 26 (1875) *Daranka.*

Adult male. Very similar to *P. leucotis*, but differing in the cinnamon colouring of the upper parts being paler, the white nuchal collar broader, and in having no black on the wing-coverts; the lesser wing-coverts uniform

white, with an ashy shade towards the scapulars. Iris dark brown; bill, tarsi and feet pale horn colour. Total length 4·4 inches, culmen 0·4, wing 3·2, tail 1·9, tarsus 0·6. ♂, 25. 1. 01. Khartoum (Hawker).

Female. Similar to that of *P. leucotis*, but with the upper parts paler, wing-coverts nearly uniform buff, obscurely mottled, with the dusky centres to the feathers; quills and tail-feathers broadly edged with rufous buff. Total length 4·3, culmen 0·4, wing 3, tail 1·7, tarsus 0·6. ♂ juv. (?). 25. 1. 01. Khartoum (Hawker). This specimen shows no signs of immaturity and agrees well with the typical female figured by Temminck.

The White-shouldered Sparrow-Lark inhabits West Africa from Senegal to the Niger, and ranges eastward to Khartoum on the Nile. It apparently entirely replaces *P. leucotis* to the west of the Nile valley.

Hartlaub's description, in 1857, of a West African *Pyrrhulauda* in the Bremen Museum, is not sufficiently good to recognise the species he refers to; it is probably identical with a bird he mentions from Senegambia in the Berlin Museum, and with Verreaux's specimen from Casamanse.

The most northern range known to me for the species is Daranka on Cape Verde, where Marche procured an example. Recently several specimens have been collected in the interior of our Gold Coast Possessions at Binduri by Captain Boyd Alexander, who kindly informs me that on December 23, 1900, he saw the species for the first time near the village of Wale-Wale (10° 30′ N. lat. 1° W. long). Being then on horseback with a column of Haussas, he could only watch them as they kept alighting on the road in front of him, or flying on to the trees which lined the road. Among them were both adult males and females. He did not meet with them again until February 20, when he was at Binduri, about fifty miles north of Gambaga. Here the country is very open in places, being covered with mealie corn, long grass, and interspersed with short stunted trees, and he shot five out of a flock which had resorted to a small dried-up water course, whose sloping

banks of loose stony soil were covered with short dry grass. The flock appeared to consist entirely of males, the majority being immature birds. They were very shy and difficult to procure; and finally, with an erratic, dancing flight, they disappeared in ever-increasing circles out of sight, but the next morning they would be back again in the same place. The note was a tiny "*twit twit*." They were evidently in breeding condition at the end of February, and this possibly accounted for the absence of females, which were probably on their nests, while the immature birds most likely belonged to the first broods. Their food consisted of grass seeds.

Mr. Hartert, during his exploration of the valley of the Niger, met with the species in February and March at Sokoto and Wurno, where he found it not uncommon; but I cannot trace its range further south.

The types of the species came from Senegambia and Nubia, but the only specimens I have seen from North-east Africa were shot by Mr. Hawker at Khartoum, on January 25, 1901; these are two adult males, and an apparently adult female, although labelled "young male." They agree perfectly with the figures of Temminck's *Fringilla otoleuca*, the white lesser wing-coverts being an extremely well-marked character; and I have been informed by Mr. Ogilvie Grant that the types of *Alauda melanocephala*, Licht., belong to this species.

Genus V. AMMOMANES.

Sexes alike in plumage; upper parts uniform, mostly of a sandy shade. Bill moderate; nostrils hidden. Wings with a large bastard-primary.

	Type.
Ammomanes, Cab. Mus. Hein. i. p. 125 (1850)	A. deserti.

KEY TO THE SPECIES.

a. No white ends to any of the quills and tail-feathers, excepting the outer pair of the latter.

a[1]. Dark portion of tail not confined to a triangular pattern, restricted to the end half of the tail.

a[2]. Crown, back and centre tail-feathers throughout their length, rich cinnamon or chestnut. Wing 4·1 inches. . . . *ferruginea*.

b[2]. Much paler above; lower throat and chest less spotted.

a[3]. Above, including the entire centre tail-feathers, bright pale cinnamon; outer web and tip of outer tail-feather white; under parts white, with the crop strongly spotted; under wing-coverts white and ashy brown . . . . . *erythrochlamys*.

b[3]. Above paler and more ashy or isabelline; tail with the centre feathers of two colours and with no pure white on the outer rectrices.

a[4]. Pale edges of primaries narrower, never crossing the entire outer web of any of these feathers; crop more spotted . . . . . *phœnicuroides*.

b[4]. Pale edges of primaries broader, crossing the centre of the outer webs of some of these feathers; crop less spotted.

a[5]. Upper parts more ashy; less rufous on the tail, where there is no sign of a dark triangular pattern.

a[6]. Paler; ashy shade on crown and mantle very slight . . . *deserti*.

b[6]. Darker; crown and mantle strongly washed with dusky grey; rufous on quills and tail darker. . . . . *samharensis*.

b^5. Upper parts bright sandy isabelline, with no grey shade; a fairly distinct dark angular pattern on the tail, this dark shade reaching nearly to the base of the centre feathers . . . . . *lusitana.* 100

b^1. Dark portion of tail confined to a triangular pattern on the terminal half; breast pale buff.

c^2. Darker; above pale cinnamon . . . . *cinctura.* 101

d^2. Paler; above sandy buff . . . . . *arenicolor.* 103

b. White ends to the eight middle quills and all the tail-feathers . . . . . *grayi.* 102

Ammomanes ferruginea.

Alauda ferruginea, Smith, Ill. Zool. S. Afr. Aves, pl. 29 (1839) *Bushman Flats.*

Ammomanes ferruginea, Sharpe, Cat. B. M. xiii. p. 649 (1890) *S. of Orange R.;* Shelley, B. Afr. I. No. 228 (1896); Nehrkorn, Kat. Eiers. p. 135 (1899) *egg;* Stark, Faun. S. Afr. B. i. p. 200 (1900).

Type. Above uniform rich cinnamon, the lesser upper wing-coverts like the back; remainder of wing dark brown, with broad cinnamon edges to the median coverts, inner greater coverts and secondaries; the dark portion of the innermost secondary reduced to an angular shaft-band, the margins on the outer greater secondaries gradually decreasing and fading into buff and are almost entirely absent from the primaries; under surface of the wings uniform brown, with the coverts slightly mottled with buff edges. Tail blackish brown, with the centre pair of feathers cinnamon, the latter scarcely paler than the back and with narrow blackish shaft-stripes; the next pair with broad rufous edges; penultimate feathers with partial narrow edges of tawny buff, and the outer pair with nearly the whole outer web tawny buff. Ear-coverts cinnamon like the back; remainder of the face buff mottled with black; throat, sides of neck, and under surface of body, and under tail-coverts white, with the lower throat and front of chest boldly spotted with dark brown. "Iris dark brown; bill dark yellowish brown, passing into dusky yellow towards the base of the lower mandible; feet and claws light yellowish brown" (Sir A. Smith). Total length 7·5 inches, culmen 0·55, wing 4·0, tail 3·1, tarsus 1·15.

The Ferruginous Desert-Lark inhabits the open country to the south of the Orange river.

This species is known to me only by the type, which was discovered by Sir Andrew Smith, who writes: "The extensive arid plains immediately to the southward of the Orange river, commonly called Bushman Flats, form the favourite habitat of this Lark. It is a wild bird, manifesting considerable suspicion at the appearance of man, and except in the morning rarely permits him to approach so near as to enable him to shoot. It soars very frequently, particularly in the early part of the day, and about sunrise whistles delightfully, being, while so occupied, generally perched upon the summit of the highest bush which exists in the locality."

The egg, according to Mr. A. Nehrkorn, resembles that of *Galerita cristata*, but is paler and measures 0·88 × 0·66.

Ammomanes erythrochlamys.

Alauda erythrochlamys, Strickl. Contr. Orn. 1852, p. 151 *Damara*.
Ammomanes erythrochlamys, Sharpe, Cat. B. M. xiii. p. 648 (1890) *Damara*; Shelley, B. Afr. I. No. 227 (1896); Stark, Faun. S. Afr. B. i. p. 199 (1900).

Adult. Above bright pale cinnamon, the feathers with obsolete chestnut shaft-streaks; wing-coverts and inner secondaries like the back; nearly the whole of the outer webs of the quills rufous buff, only slightly paler than the back; remainder of the quills and a portion of the under wing-coverts pale ashy brown; the rest of the under wing-coverts and the narrow inner edges to the quills buff (in immature birds the edges are broader and rufous buff). Tail with the centre-feathers entirely bright pale cinnamon like the back; remainder of the tail gradually shading into blackish brown towards the three outer pairs of feathers, which have white edges, extremely narrow, excepting on the outermost ones, which have the whole outer webs and an equally broad end white. Ear-coverts rufous like the mantle; a broad eye-brow, remainder of face and the under parts generally white, with some rather strongly marked dusky brown angular spots at the base of the throat and some pale chestnut streaks on the sides of the crop. "Iris light dusky hazel; bill dusky, under mandible paler; tarsi and feet brown" (T. Ayres). Total length 6·2 inches, culmen 0·65, wing 3·3, tail 2·7, tarsus 1·05. ♂, 18. 11. 54. Damara (Andersson).

The Red-backed Desert-Lark inhabits Damaraland and the Transvaal.

The type of the species came from the former country and is now in the Cambridge Museum. Chapman found this Lark in but one locality, viz., in the neighbourhood of Walfisch bay. The species has been met with in Damara by Wahlberg, Andersson and Mr. A. Erickson in May and November, and all their specimens were obtained at Walfisch bay. These western birds are slightly paler than the Transvaal specimens examined by me, which latter were killed in June and November. This may be due to the season, but is more probably the effect of the climate, which differs greatly in these two countries, being much dryer in the former than in the latter district.

The specimen figured (Ibis, 1874, pl. 3, fig. 2) is a female, shot by Mr. T. Ayres, who found it "amongst some rocks and stones in the range of low hills some three or four miles from Potchefstroom; it had a peculiar knack of hiding itself by creeping over and about the bits of rock." All his specimens were procured near Potchefstroom on June 20 and November 2.

Ammomanes phœnicuroides.

Mirafra phœnicuroides, Blyth, J. A. S. Beng. xxii. p. 583 (1853).

Ammomanes phœnicuroides, Sharpe, Cat. B. M. xiii. p. 647 (1890) *S. Arabia to Afghanistan;* Hartert, Kat. Vög. Mus. Senck. p. 41 (1891) *Caspian Sea.*

Ammomanes lusitanica parvirostris, Hartert, J. f. O. 1890, p. 156, *Caspian Sea.*

Ammomanes akeleyi, Elliot, Field Columb. Mus. No. 17, Orn. No. 2. p. 39 (1897) *Somali;* Lort Phillips, Ibis, 1898, p. 401; Hawker, Ibis, 1899, p. 65 *Somali;* Sharpe, P. Z. S. 1901, p. 303 *Somali;* Grant and Reid, Ibis, 1901, p. 629 *Somali.*

Adult. Similar in general appearance to *A. deserti*, but readily distinguished by the dull, browner, and less rufous shade of the plumage, especially of the wings, tail-coverts and tail, also in the crop being rather more strongly spotted; the pale edges to the outer webs of the primaries never

extending across to the shaft. This latter character distinguishes the Asiatic from the purely African species of *Ammomanes*. Total length 6·3 inches, culmen 0·45, wing 3·8 and 3·65, tail 2·6 and 2·3, tarsus 0·85 and 0·80. ♂, Somali (Hawker).

Blyth's Desert-Lark ranges from Somaliland into Afghanistan and N.W. India.

This species was already known to range from India to the Arabian coast, so that one cannot be much surprised to find it invading the Somali country; but it remained for Mr. Elliot to first record the species from the African continent, which he did under the name of *A. akeleyi*. He remarks: "I do not remember seeing it beyond Hillier on the plateau, and we first met with it at our second camp from Berbera." About the same place Mr. Lort Phillips obtained a specimen in January; Mr. Hawker has collected three others at Laferug and Mandera in November, and Mr. A. E. Pease shot one of these Larks in the latter month at Somado and another at Lasmaru in April, so that it cannot be considered as a mere straggler to Africa. On comparing four of these skins from Somaliland with the fine series of specimens from India in the British Museum, there remains no doubt in my mind that *A. akeleyi* is the same species as *A. phœnicuroides* (Blyth).

This Lark may be readily distinguished from all its African allies, not only by its pale ashy brown colouring, but also by the pale portions of the primaries never extending entirely across the outer web of any of them.

The two males from which I have taken my description, one from India and the other from Somaliland, are identical in colouring and show no appreciable difference in the measurements.

Ammomanes deserti.

Alauda deserti, Licht. Verz. Doubl. p. 28 (1825) *Upper Egypt.*

Ammomanes deserti, Sharpe, Cat. B. M. xiii. p. 646 (1890); Shelley, B. Afr. I. No. 226 (1896); Cholmley, Ibis, 1897, p. 206 *Erba Mt.;* Nehrkorn, Kat. Eiers. p. 135 (1899) *egg*; Rothschild & Wollaston, Ibis, 1902, p. 7 *Shendy.*

Alauda isabellina, Temm. Pl. Col. iii. pl. 244, fig. 2 (1825).

Adult. Above uniform vinous-shaded sandy buff, of a slightly more cinnamon shade on the upper tail-coverts; wings pale brown, with the edges of the coverts and outer margins of the secondaries like the back; the entire basal portion of the outer webs of all but the two outer primaries, rufous buff; under wing-coverts and broad partial inner of the quills, rufous buff; tail brown, with the outer edges of the feathers and the external webs of the outer two pairs, rufous buff; ear-coverts like the crown; remainder of sides of head, sides of upper neck and the throat white; breast and under tail-coverts sandy buff, with a few faintly marked brown spots on the crop. Iris dusky brown; bill, tarsi and feet dusky flesh colour. Total length 6 inches, culmen 0·6, wing 3·85, tail 2·6, tarsus 0·9. ♂, Korosko (*Shelley*).

Females very slightly smaller.

Lichtenstein's Desert-Lark inhabits North Arabia and Egypt to as far south as Suakin.

According to Heuglin, these Larks are resident in Egypt, N. Arabia, and range southward along the Red Sea coast, avoiding the mountains, and are generally to be met with in pairs along the borders of the cultivated land and the desert, often frequenting the caravan tracks and feeding on insects, corn, and the seeds of the desert plants. Their note is very insignificant, and they keep to the ground, only occasionally perching on low bushes.

The type of *A. deserti* (Licht.) came from Upper Egypt, and this is the species which I found distributed over Egypt in suitable localities, but most abundant above the First Cataract. They construct a neatly formed nest of grass, placed in a slight depression and sheltered by a tuft of grass or a large stone, and lay four eggs. These are of an ashy cream colour, obscurely marked with purplish grey and more distinctly so with brown. They measure 0·9 inch by 0·6.

1. Amblyas[illegible] [illegible]
2. Tephrocorys plan[illegible]

The exact range of this species is somewhat doubtful, as it seems to be entirely replaced in the Abyssinian highlands by *A. samharensis*.

Whether the Samhar Desert-Lark is the southern representative of *A. deserti*, as I believe it to be, or a local mountain form, I am unable to say, for no species of *Ammomanes* have been recorded from Shoa, and all those I have seen from Somaliland belong to *A. lusitana* and *A. phœnicuroides*. *A. deserti*, recorded by Mr. A. J. Cholmley from the Erba Mountains near Suakin, has, I believe, been rightly determined, and this is the most southern range, known to me, for the species.

Ammomanes samharensis. (Pl. 21, fig. 1.)

Ammomanes deserti (nec Licht.), Finsch. Trans. Z. S. vii. p. 272 (1870); Blanf. Geol. and Zool. Abyss. p. 390 (1870).

Type. Very similar to *A. deserti*, from which it differs in being darker, with the crown and mantle brown, of an ashy grey shade. Total length 5·75, culmen 0·5, wing 3·5, tail 2·4, tarsus 0·8. ♀, 22. 8. 68. Amba (Blanford).

The Samhar Desert-Lark inhabits Abyssinia.

The type was shot at Amba, in the highlands, on August 22, 1868, by Dr. Blanford, while in company with Mr. Jesse, who collected two other similar specimens at the same place, and all these are now in the British Museum. Referring to these specimens under the name of *Ammomanes deserti*, Dr. Blanford wrote: "Not rare to the west and north west of Massowa, in rocky and stony ground, amongst thin bushes."

A. samharensis is intermediate in the colouring of the upper parts between typical *A. deserti* from Upper Egypt, and the type of *A. saturata* from Southern Arabia, but belongs to the *A. deserti* group in having the rufous of the quills extended

across the outer webs of some of the primaries, and will probably be called by some ornithologists *A. deserti samharensis*.

Ammomanes lusitana.

Alauda lusitana, Gm. S. N. i. p. 798 (1788); Degl. Orn. Eur. i. p. 405 (1849).

Ammomanes lusitana, Shelley, B. Egypt, p. 136 (1872).

Ammomanes algeriensis, Sharpe, Cat. B. M. xiii. p. 645 (1890) *Nubia*; Koenig, J. f. O. 1895, p. 441, pl. 8; 1896, p. 216, pl. 7, fig. 6 *egg*; Nehrkorn, Kat. Eiers. p. 135 (1899) *egg*.

Ammomanes deserti (nec Licht.), Sharpe, P. Z. S. 1895, p. 472 *Somali*.

Adult. Above uniform bright sandy buff, with a shade of cinnamon on the upper tail-coverts; wings pale brown, with paler edges to the feathers, the coverts and outer edges of the secondaries sandy buff like the back; all but the two outer primaries, with the entire basal portion of the outer webs, rufous buff; under wing-coverts and the broad partial inner margins to the quills rufous buff; tail, with the entire basal quarter and broad edges to the feathers rufous buff, and the remainder dark brown, which latter colour forms a fairly well-defined large triangular pattern. Ear-coverts sandy buff; remainder of the head, sides of upper neck and the throat buffy white; under surface of body pale sandy buff, with a few very faintly marked brown spots near the crop. Total length 6·2 inches, culmen 0·55, wing 3·9, tail 2·5, tarsus 0·85. Somali (Lort Phillips).

The Pale Desert-Lark ranges from Somaliland over N. Africa.

This species may be most readily distinguished from its nearest ally, *A. deserti*, by its brighter, paler and more sandy colouring, and especially by this colour extending over the basal quarter of the tail.

Very little is known with regard to these Larks in eastern Africa. In the British Museum there are three specimens, labelled "Somaliland (Lort Phillips);" ♂, "Ardeh, 14. 7. 94 (Dr. A. Donaldson Smith)," and ♀, "Nubia (Dr. A. Leith Adams)." All these belong to rather a pale form compared with those from Algeria.

Dr. Bowdler Sharpe, in 1890, proposed to call this species

A. algeriensis, as the name of *Alauda lusitana* was not clearly defined by Gmelin; but that objection was removed by Degland in 1849, when he assigned Gmelin's name to this species.

The eggs, according to Mr. A. Nehrkorn, have the ground cream-colour, with clouded violet blotches over which are reddish grey spots. They measure 0·96 × 0·66, and have been figured in the *Journal für Ornithologie*, 1896.

Ammomanes cinctura.

Melanocorypha cinctura, Gould, Voy. "Beagle" Birds, p. 87 (1841) *Cape Verde Is.*

Ammomanes cinctura, Sharpe, Cat. B. M. xiii. p. 644 (1890); Shelley, B. Afr. I. No. 225 (1896); Alexander, Ibis, 1898, pp. 85, 110, 112, 116; Bocage, Jorn. Lisbon, 1898, p. 146; Salvad. Ann. Mus. Genov. 1899, p. 294 *Cape Verde Is.*

Alauda cinctura, Dohrn, J. f. O. 1871, p. 5 *Cape Verde Is.*

Adult. Above uniform pale cinnamon, slightly darker on the quills and tail; many of the primaries with blackish terminal marks; axillaries and under wing-coverts rufous buff; under surface of quills pale cinnamon. Tail with a terminal triangular blackish patch reaching down about one-third of the tail; ear-coverts pale cinnamon like the back; eyebrow, fore part of face and under parts generally buff, slightly more rufous on the crop, where there are some very obscure dusky spots; flanks also slightly washed with rufous. Iris brown, bill and legs ashy. Total length 5·2 inches, culmen 0·4, wing 3·5, tail 2, tarsus 0·8. ♀, 25. 2. 97. San Iago (Boyd Alexander).

Gould's Desert-Lark inhabits the Cape Verde Islands.

The type of the species was discovered by Darwin during the voyage of the "Beagle," and is now in the British Museum along with other specimens from these islands.

Mr. Keulemans, while in company with Dr. Dohrn, met with the species and writes:—"It is very common in the plains near the town of Porto Praya, in Santiago, and also on the mountains in the interior of the island; but I never observed it in any cultivated district. It seems to avoid vegetation as much as it does water, and occurs nowhere save

in desert sandy localities. It is usually met with in flocks of from three to seven individuals, or in company with another small Lark (*Pyrrhulauda nigriceps*, Gld.). During my sojourn in the island I collected about twenty-five specimens, all of which differed somewhat in tint of plumage. In March I obtained several young birds, which resembled the old ones, but had a tendency to become spotted on the breast and sides of the head. The breeding season is from December to March, but I never succeeded in finding a nest. It feeds on seeds and insects, and in the stomachs of most of those I examined I found seeds, the remains of termites, and small coleoptera. The song is weak, and resembles rather the warbling of the Whitethroat than the notes of a true Lark. Like the latter, it rises to some elevation in the air, though rarely above about thirty or forty feet. Its native name is *Pastor*. On the other islands I never met with it."

Regarding this species in Santiago, Mr. Boyd Alexander writes: "By no means plentiful, and locally distributed on the stretches of high table land near the sea. More than a week elapsed before we noticed this species, and then only two birds, on a piece of loose gravelly land near Praya. This pair had a nest containing one young bird, almost fledged. On approaching the nest the two old birds, which were not far off, ran at a rapid rate towards their young one, the male bird uttering the whole time a plaintive '*wheet*.' Though we discovered more of this species later on, I never heard them utter more than this one note. They were always seen either singly or in pairs. Seven specimens were obtained." While at Sal, the most north-eastern island of the group, he found this Lark on the flat stony portions in considerable numbers, and two nests were discovered, each containing one young one. He also found the species plentiful at Boavista.

Ammomanes arenicolor.

Alauda arenicolor, Sundev. Œfv. K. Vet. Ak. Förh. Stockh. 1850, p. 128.
Ammomanes pallida, Cab. Mus. Hein. i. p. 125 note (1850) *Arabia.*
Melanocoryphaha elegans, Brehm. Vogelf. p. 122 (1855) *Nubia.*
? Ammomanes regulus, Bp. C. R. xliv. p. 1066 (1847) *Sahara.*
Ammomanes cinctura (nec Gould) Sharpe, Cat. B. M. xiii. p. 644 (1890) pt. *Red Sea;* Koenig, J. f. O. 1895, p. 448, pl. 9; 1896, p. 216, pl. 7, fig. 7 *egg, Algeria;* Cholmley, Ibis, 1897, p. 206 *Red Sea.*
Ammomanes cinctura arenicolor, Rothschild & Wollaston, Ibis, 1902, p. 7 *Shendy.*

Adult. Similar to *A. cinctura*, but very much paler, the upper parts being sandy buff with a very faint ashy shade on the upper back. Total length 5·2 inches, culmen 0·4, wing 3·55, tail 2·1, tarsus 0·85. Second Cataract of Nile (A. L. Adams).

The Pale Spotted-tailed Desert-Lark ranges from Persia and the Red Sea over North Africa, and has even occurred in Malta.

According to Heuglin it is to be found along the confines of the cultivated parts of Kordofan and Sennaar, and ranges into Arabia. In the British Museum there are specimens from Persia and the Second Cataract of the Nile, the latter shot by Dr. Leith Adams, who wrote:—"Is not uncommon on the deserts of Nubia and usually seen in small flocks. It runs at great speed and, like the other Sand-larks, stops at every few steps. It has a call-note very like that of the Trumpeter Bullfinch, which it resembles in its flight." On the west coast of the Red Sea Mr. A. J. Cholmley found the species quite common, and obtained an example at Berenice.

Ammomanes grayi.

Alauda grayi, Wahlb. Œfv. K. Vet. Ak. Förh. Stockh. 1855, p. 213 *Damara.*
Ammomanes grayi, Sharpe, Cat. B. M. xiii. p. 643 (1890) *Damara;* Shelley, B. Afr. I. No. 224 (1896); Nehrkorn, Kat. Eiers. p. 135 (1899) *egg;* Stark, Faun. S. Afr. B. i. p. 198 (1900).

Adult male. Above sandy buff; upper wing-coverts and innermost secondaries like the back; quills very pale dusky brown, inclining to white

on the primaries, the latter having dark brown ends, excepting the inner four, which have rather broad white tips like all the outer secondaries; secondaries with broad, and the primaries with narrow, buff outer edges; under wing-coverts and inner margins of the quills white; remainder of quills whitish ash. Tail: centre-feathers with the basal half rufous buff and the terminal half pale brown, broadly edged and tipped with sandy white; remainder of the tail white and dark brown, the latter forming a triangular pattern with the apex about half way down the centre-feathers; all the feathers with white ends, broadest on the inner webs. A narrow frontal band, sides of head and entire under parts white, with a sandy shade on the ear-coverts. Total length 5·4 inches, culmen 0·5, wing 3·25, tail 2·0, tarsus 0·8. ♂, 29. 5. 64. Wilson's Fountain (Andersson).

Gray's Desert-Lark inhabits Damaraland.

The type was discovered by Wahlberg on the sandy desert between the Swakop and Kaisip rivers near Walfisch bay. Chapman also met with this species "on the barren plains in the neighbourhood of Walfisch bay, as well as for a short distance inland, but not so far inland at Otjimbinque. A few individuals were generally found in company." According to Andersson, "it feeds on seeds and insects and is comparatively tame, but where grass abounds it is difficult to secure." There are seven of Andersson's specimens in the British Museum, all from Damaraland, so the range of the species appears to be extremely limited, and I am not aware of any others having been procured since Andersson's time.

The egg is described by Mr. A. Nehrkorn as white, with small violet and greyish yellow spots, and measuring 0·88 × 0·6.

Genus VI. BOTHA.

Bill apparently pink in life, conical, with the culmen very nearly straight; nostrils hidden. Wing of ten primaries; bastard primary long, similar to that of *Galerita;* tarsi and feet also as in *Galerita*, and the hind claw slightly curved and longer than the hind toe. Tail half white and half blackish brown, the dark portion forming a triangle with the base at the end of the tail and the apex at the base of the two centre-feathers.

1. Botha difficilis.
2. Calandrella starki. 3. C. sclateri.

Botha difficilis, Sp. n. (Pl. 22, fig. 1.)

Immature. Above blackish brown, with a few narrow white edges to the feathers. Wing, with the outer edges of most of the quills cinnamon buff and their inner webs with broad partial edges of that colour; under wing-coverts buff, with a few blackish streaks. Tail with the base of all but the centre-feathers white, which colour increases in extent towards the outer feathers, which are uniform pure white with a broad blackish inner margin; thus the dark portion of the tail is restricted to a triangle with the apex at the base of the centre pair of feathers. Sides of head dark brown mottled with buff; under parts generally buff, strongly marked with blackish spots on the lower throat; flanks with some broad blackish stripes. Total length 4·5 inches, culmen 0·4, wing 2·95, tail 1·6, tarsus 0·7. Middle toe with claw 0·6; hind toe with claw 0·65, hind claw 0·4. Orange River Colony (T. E. Buckley).

Botha's Lark inhabits the Orange River Colony.

The only specimen of this species known to me is an immature bird procured by Mr. T. E. Buckley in the above-mentioned country: it passed with my collection into that of the British Museum.

The following four characters combined readily distinguish this species: (1) Bill conical; (2) bastard-primary large; (3) hind claw long and nearly straight; (4) pattern of tail. There is no other Lark in which more than two of these four characters are ever combined.

Genus VII. GALERITA.

Bill somewhat elongated and decidedly not Finch-like; nostrils hidden; feathers of the posterior half of crown much elongated, forming a very distinct crest; secondaries reaching nearly or quite to the tip of the wing; bastard primary large, more than half-an-inch in length, and generally distinctly longer than the exposed culmen; tarsi and feet pale, of moderate size; hind claw long and very slightly curved. Plumage of upper parts mottled brown or sandy buff with dark centres to the feathers; pale pattern of tail confined to the two pairs of outer feathers.

	Type.
Galerida, Boie, Ibis, 1828, p. 321	G. cristata.
Spizalauda, Blyth, J. A. S. Beng. xxiv. p. 258 (1855). . .	G. deva.
Ptilocorys, Madarasz, Magyar Mad. Fuz. ii. p. 48 (1899) .	G. cristata.

The genus *Galerita* is closely allied to *Alauda* and forms a good connecting link between the foregoing genera and those that follow. The *Galeritæ* are most readily distinguished from the *Alaudæ* by their longer bastard primary, and their habit of perching at times on bushes.

The "*G. cristata*" group is represented in the Ethiopian Region by *G. senegalensis*, which I here treat as specifically distinct from *G. cristata*, the more northern form, which has not to my knowledge been met with to the south of the Tropic of Cancer. *G. abyssinica* may be only a subspecies of *G. senegalensis*, for I have seen intermediate forms from Tani, near Khartoum, and from Fao on the Persian Gulf.

It also appears to me that *G. ellioti* and *G. prætermissa* are scarcely more than subspecies of *G. thecklæ*, for in the British Museum there are two specimens of *G. cristata pallida*, Whitaker, very similar to Somali specimens of *G. ellioti*, and specimens of *G. thecklæ* from Cadiz (J. Osborne), and *G. prætermissa*, ♂, 22. 1. 99, Jifadensa (Lord Lovat), are remarkable for their likeness to each other.

KEY TO THE GENERA AND SPECIES OF CRESTED-LARKS.

a. Bill more slender; pale pattern of tail sandy buff, extending over half of the outer feather and nearly the whole of the outer web of the next.

a[1] Larger; wing not less than 3·5 inches; crest strongly developed. (GALERITA.)

a^2. Bastard primary shorter and distinctly falls short of end of primary-coverts; bill generally longer, exposed portion of culmen not less than 0·6 inch and about equal to bastard primary. (*G. cristata* group.)

a^3. Dark portion of feathers blackish brown . . . . . *senegalensis.* 108

b^3. Dark portion of feathers of wings, four centre tail-feathers and crop pale bronzy brown . . . . . *abyssinicus.* 110

b^2. Bastard primary longer and reaching to or beyond the end of primary-coverts; bill generally shorter, exposed portion of culmen not more than 0·6 inch and shorter than the bastard primary. (*G. thecklæ* group.)

c^3. Breast whiter; feathers of upper parts with narrower sharply defined blackish centres and pale sandy brown edges; bastard primary just reaches to end of primary coverts; exposed culmen 0·5. *ellioti.* 111

d^3. Breast buff; feathers of upper parts less sandy and with broader, less sharply defined, blackish centres; bastard primary reaches beyond the primary coverts; exposed culmen 0·6 *prætermissa.* 112

b^1. Smaller; wing less than 3·5 (about 3·2); crown only slightly crested. (Heliocorys).

c^2. Slightly paler and smaller; wing 3·1 to 3·25 . . . . . *modesta.* 113

d^2. Slightly darker and larger; wing 3·1 to 3·4 . . . . . *bucolica.* 113

b. Bill stouter; pale pattern of tail buffy white and confined to the outer webs and terminal margin on the outer two pairs of feathers; crown very slightly crested; exposed culmen 0·7, wing about 3·8. (Calendula) . . . . *crassirostris.* 115

Galerita senegalensis.

Alauda senegalensis, P. L. S. Müll. S. N. Suppl. p. 137 (1776); Reichen. J. f. O. 1875, p. 42 *Accra.*

Ptilocorys senegalensis, Madarasz, Mag. Madar. ii. p. 50, pl. 1 (1899).

Alauda cristata (nec Linn.), Blanf. Geol. and Zool. Abyss. p. 387 (1870) *Abyssinia;* Barnes, Ibis, 1893 *Aden.*

Galerita cristata, Heugl. Orn. N. O. Afr. p. 680 (1870 pt.); Oust. Bibl. Ec. Hautes Et. xxxi. art. 10, p. 8 (1886) *Somali;* Sharpe, Cat. Birds B. M. xiii. p. 626 (1890 pt.) *Senegambia, Sierra Leone, Abyssinia;* Rendall, Ibis, 1892, p. 221 *Gambia;* Sharpe, P. Z. S. 1895, p. 472 *Somali;* Shelley, B. Afr. I. No. 219 (1896); Lort Phillips, Ibis, 1898, p. 401 *Somali;* Hawker, Ibis, 1899, p. 65 *Somali;* Sharpe, P. Z. S. 1901, p. 302 *Somali;* Grant, Ibis, 1901, p. 629 *Somali.*

Galerida cristata senegalensis, Hartert, Nov. Zool. 1901, p. 340 *Nigeria.*

Adult. Above mottled; sandy brown, with blackish brown centres to the feathers; crest-feathers long, with very sharply marked blackish shaft-stripes; upper tail-coverts strongly washed with pale cinnamon. Tail: centre feathers dark brown, with a rufous shade on the basal half; outer pair of feathers bright sandy buff, with a dusky wedge-shaped portion occupying half of the inner web; penultimate feather with the outer edge and the end sandy buff. Wings: above brown, with pale sandy edges to the feathers, inclining to rufous on the primary coverts and primaries; under surface paler and more dusky, with the coverts and broad inner edges of the quills buff. Sides of head buff, mottled with brown on the hinder part of the ear-coverts and along the sides of the upper throat; sides of the upper neck and the under parts generally buffy white; lower throat and crop spotted with blackish brown, and separated from the side of the neck by a fairly distinct patch of black; flanks slightly shaded with sandy brown and with some rather obscure brown shaft-stripes. "Iris brown; bill with the upper mandible dark brown and the lower one pale brown; tarsi and feet pale yellowish brown" (Reichenow). Total length 6·8 inches, culmen 0·6, wing 3·9, tail 2·4, tarsus 0·95. Gambia (Sir A. Moloney).

Compared with the typical European *G. cristata*, *G. senegalensis* differs in having the upper parts of a paler sandy shade, with the upper tail-coverts and centre tail-feathers more sandy rufous; the crest-feathers longer, and with the dark shaft-stripes more sharply marked; pale pattern of the two outer pairs of tail-feathers larger and of a bright sandy-shaded buff.

The Senegal Crested-Lark ranges from the Mediterranean coast southward to the Niger and Somaliland, and eastward to China.

The type of the species came from Senegambia. From this district there are seven specimens in the British Museum. The late Sir E. Sabine procured the species at Sierra Leone; and Dr. Reichenow, during his visit to Accra, on the Gold Coast, found the species generally distributed over the surrounding plains. In the Niger district, which is about the most southern range known for these Larks, Mr. Hartert found them frequenting the northern highlands from December to March, after which month they apparently migrated northward.

To the eastward, in nearly the same latitude, specimens have been collected by Mr. Lort Phillips on the Berbera plains in Somaliland in January, at Gedais in February, and at Sogsoda in March, and he writes: "We found the Crested Lark both on the plateau and on the Maritime plain. At Berbera itself it frequents the cattle market, where it may always be seen on the rubbish heaps." Mr. Pease records it as very common throughout Somaliland, and he collected specimens at Somadu in November, and at Las Mân in April. Other specimens have been obtained by Mr. Hawker at Ujawaji, and by Dr. Donaldson Smith at Biji and Magog.

Mr. Blanford found the species common along the coast at Massowa, and in the British Museum there is one obtained by Mr. Jesse at Amba, and a fine series from Asia, including the type of *Alauda leautungensis*, Swinhoe, from China, which in no way differs from Senegambian specimens; and I think that we may refer to this species Dr. Sharpe's "Rufous-tailed" and "Sandy-coloured" races of *G. cristata* (Cat. B. M. xiii. pp. 630, 631).

As this Lark is apparently common in both West and North-east Africa, it is strange that it has not been procured in Central Africa: it is known to me from the Nile valley by only two specimens recently collected by Mr. Hawker at

Khartoum, and one shot by my friend, Colonel W. Verner, at Tani, in the Soudan, April 9, 1885. Colonel Verner's specimen, and another obtained by Mr. W. D. Cumming at Fao, in Turkish Arabia, are so nearly intermediate in colour between the true *G. senegalensis* and *G. abyssinica*, that Dr. Sharpe (Cat. xiii. pp. 631, 635) refers the latter to his "sandy-coloured" race of *G. cristata*, and the former to *G. isabellina*.

Galerita abyssinica.

Galerida abyssinica, Bp. Consp. i. p. 245 (1850) *Abyssinia*.
Galerita isabellina (nec Bp.), Sharpe, Cat. B. M. xiii. p. 635 (1890, pt.) *Zoulla, Fazogloa;* Shelley, B. Afr. I. No. 221 (1896).
Galerita flava, Brehm, J. f. O. 1854, p. 77 *E. Soudan;* Witherby, Ibis, 1901, p. 244 *Khartoum*.

Adult. Most nearly allied to *G. senegalensis*, but paler, and with the dark parts of the wings of a sandy bronze shade; the darker portion of the under surface of the quills dusky shaded sandy pink, very slightly contrasting with the rufous buff of the edges of the quills, and the under wing-coverts; sides of head paler than in *G. senegalensis* and with only a few faintly defined small dark marks; throat and body white with a sandy buff shade on the crop, flanks, and under tail-coverts; lower throat with elongated brown spots. "Iris brown; bill horn colour; legs and feet pale straw colour" (H. F. Witherby). Total length 6·7 inches, culmen 0·65, wing 3·9, tail 2·5, tarsus 1·0. Abyssinia (Verreaux).

The Abyssinian Pale Crested-Lark inhabits the Abyssinian district.

In the British Museum the only specimens I should refer to this species are: the example from Fazogloa; an albino procured by Mr. Blanford at Zoulla, in Annesley Bay, and four specimens labelled 'Abyssinia.' I can find no other reliable information regarding this form, which would appear to be confined to Abyssinia.

Dr. Sharpe (Cat. B.M. xiii. p. 635, note) writes: "I believe *G. abyssinica* and *G. isabellina* of Bonaparte's 'Conspectus'

(p. 245) to be the same bird. Of the two names published on the same page I prefer that of *isabellina*, as *abyssinica* might infer that it is strictly Abyssinian, which is not the case." The accuracy of this final remark is open to discussion when we find that Mr. Hartert (Nov. Zool. 1897, pp. 142-147) divides *G. cristata*, Auct., into seventeen or eighteen subspecies; two of which he calls *G. cristata isabellina*, Bp., and *G. cristata flava* (C. L. Brehm, 1854). I do not agree with Mr. Hartert that the name *G. flava* has any right to supplant that of *G. abyssinica*, which is described as differing from *G. cristata* in its "colore deserti," and resembling *G. isabellina* in colour; but is supposed to be larger, and to be a native of Abyssinia. The *G. isabellina*, Bp., would appear to refer to a more northern race, probably the *G. cristata pallida* of Whitaker (Ibis, 1895, p. 100).

Galerita ellioti.

Galerita ellioti, Hartert, Nov. Zool. 1897, p. 144 *Somali.*
Galerita pallida (nec Whitaker), Elliot, Field Columb. Mus. i. No. 2, p. 38 (1897) *Somali.*

Adult. General plumage very similar to that of *G. senegalensis*, but with the upper parts of a more sandy rufous shade and the dark centres to the feathers rather narrower and more sharply defined. Most readily distinguished from *G. senegalensis* by its smaller and shorter bill and longer bastard-primary, the latter reaching just to the tip of the primary-coverts. Iris brown; bill horn colour passing into flesh colour at the base of the lower mandible; tarsi and feet flesh colour (Elliot). Total length 6·6 inches, culmen 0·5, wing 4, tail 2·5, tarsus 0·85. ♂, 14. 12. 97. Ujawaji (Hawker).

Elliot's Crested-Lark inhabits Somaliland.

Mr. Elliot procured two male specimens of this Lark, one at Hagahbar and the other at Hersi Barri in Ogaden, and named it *G. pallida;* but as that name had been previously given to a Tunisian bird by Mr. J. J. S. Whitaker, Ibis, 1895,

p. 100, Mr. Hartert very rightly re-named the Somali form *G. ellioti*.

Besides the specimen I have described, there are two others from Somaliland in the British Museum, collected by Mr. Lort Phillips, in February and March, 1897. This species is a pale, desert form of the *G. thecklæ* group. Mr. Elliot, when he described the species as new, did not compare it with *G. thecklæ*, but fortunately gave a very accurate description of the plumage:—"Its back is so light coloured as to render the bird somewhat difficult to see on the sandy soil, and the under-parts strongly incline to white. The crest is rather long and slender, but the length varies, I imagine, among individuals, as those of the two specimens obtained are not equal in this respect. They also vary in the colour of the upper parts, the Hersi Barri specimen being the lighter, which is surprising as Bagahbur is a much more sandy and open locality."

Galerita prætermissa.

Alauda prætermissa, Blanford, Geol. and Zool. Abyss. p. 388, pl. 6 (1870) *Senafé;* Sharpe, Cat. B. M. xiii. p. 579 (1890) *Shoa, Abyssinia;* Shelley, B. Afr. I. No. 191 (1896); Grant, Ibis, 1900, p. 138; 1901, p. 627 *S. Abyssinia.*

Alauda (Galerita) arenicola var. fusca, Blanf. Geol. and Zool. Abyss. p. 387 (1870) *Lake Ashanghi.*

Galerita rüppelli, Hartert, J. f. O. 1890, p. 102 *Abyssinia;* id. Kat. Vög. Mus. Senck. p. 40 (1891) *Simien.*

Type. Similar to *G. senegalensis;* but darker above and with a shade of yellowish buff on the under parts. It may be most readily distinguished by the longer bastard-primary, which reaches to the end of the primary-coverts. "Iris and legs brown; bill dark horn colour." Total length 6·1 inches, culmen 0·6, wing 3·8, tail 2·3, tarsus 0·95. ♂, 10. 3. 68. Senafé (Blanford).

The Dark Crested-Lark inhabits the Abyssinian area.

At Jeffi Dunsa, in Shoa, Lord Lovat and Mr. A. E. Pease shot specimens in December and January, and found these

Larks very common on the highlands, in small flocks. Harris obtained a specimen at Angollala. Antinori collected others at Licce and Tuor Hamesh, and Ragazzi at Antoto. An egg, obtained by Antinori, much resembled that of *Alauda arvensis*, and according to his observations, this Lark lays only one egg in a nest. He also met with the species in Northern Abyssinia, at Adghelghel. The type was discovered at Senafé by Mr. Blanford, who found the species to be common there as well as at Adigrat, and he procured the type of his *Alauda arenicola var. fusca* at Lake Ashangi. A Semien specimen, from Rüppell's collection in the Frankfort Museum, is the type of *Galerida rüppelli*, Hartert.

Genus VIII. HELIOCORYS.

Similar to *Galerita*, but differs in the crest feathers being shorter. The members of this genus are of small size: wing 3·1 to 3·3 inches, and the bastard-primary extends well beyond the end of the primary-coverts.

Type.

Heliocorys, Sharpe, Cat. B. M. xiii. p. 623 (1890) . . . H. bucolica.

Heliocorys modesta.

Galerita modesta, Heugl. J. f. O. 1864, p. 274 *Bongo;* Shelley, B. Afr. I. No. 222 (1896); Alexander, Ibis, 1902, p. 294 *Gold Coast.*

Heliocorys modesta, Sharpe, Cat. B. M. xiii. p. 623 (1890) *Kuderma, Tomaja, Redjaf, Tobbo.*

Mirafra bucolica, Hartl. Zool. Jahrb. 1886, p. 327 *Fadjuli, Tomaja, Kabajendi, Kuderma.*

Heliocorys modesta giffardi, Hartert, Bull. B. O. C. x. p. 5 (1899); id. Nov. Zool. 1899, p. 415 *Gambaga.*

Adult male. Similar in colouring to *G. senegalensis*, but darker; the dark centres to the feathers of the crown and mantle being broad and the edges tawny-shaded earthy brown; crest short; hind neck paler than the back; upper tail-coverts uniform deep rufous brown. Wing: with a long bastard primary extending beyond the primary-coverts; under surface dusky brown, with the inner edges of the quills and broad edges to the coverts deep rufous

buff. Tail: blackish brown with rather narrow ashy edges; outer feather with nearly the whole of the external web rufous buff and a tinge of that colour towards the end of the inner web; the penultimate feather with a very narrow buff edge to the outer web. Sides of head and the upper throat white; ear-coverts mostly brown; a black band from the nostril to the eye, and a blackish brown patch along the top and in front of the ear-coverts passing into scattered spots on the sides of the upper throat; lower throat, under surface of body and under tail-coverts buff; lower throat and crop with broad black shaft stripes, and a patch of that colour separating the crop from the side of the lower neck, the latter buffy brown with rather narrow black shaft-stripes; flanks narrowly streaked and partially shaded with rufous brown. "Iris brown; bill dusky brown fading into flesh colour towards the base; tarsi and feet flesh colour" (Emin). Total length in the flesh 6 inches, culmen 0·45, wing 3·3, tail 1·9, tarsus 0·8. ♂, 14. 11. 82. Kudurma (Emin).

Adult female. Upper parts slightly paler and more rufous buff on the tail; outer feather with the exterior web and a large terminal portion of the inner web rufous buff, which colour extends over quite half of the outer web of the penultimate feather; lower throat and crop with very small narrow shaft-spots. Total length in the flesh 5·5 inches, culmen 0·45, wing 3·1, tail 1·9, tarsus 0·8. ♀, 17. 1. 88. Redjaf (Emin).

Heuglin's Little Crested-Lark inhabits the Sudan from Gambaga (10° 30′ N. lat., 1° W. long.), to the Upper White Nile district.

The members of this genus have been divided into three races: *Galerita modesta*, Heugl., *Mirafra bucolica*, Hartl., and *Heliocorys modesta giffardi*, Hartert; but I fail to find any definite characters for distinguishing them.

The type of *G. modesta*, Heugl., was discovered in the Bongo country of the White Nile, near the Kasanga river, where these Larks were found frequenting the sunny openings in this wooded district; they were generally to be seen perched on stones or ant-hills and more rarely on the tops of grass-tufts, and in song and habits reminded Heuglin of the Short-toed Larks. The type measured: wing 3·12 inches, tail 1·6, tarsus 0·72, culmen 0·4. Owing to the specimens procured by Emin Pasha, some 400 miles further up the Nile, being slightly darker and on an average larger, Hartlaub

proposed for them the name of *Mirafra bucolica*, and remarks that, although these forms are very similar, they are positively distinct.

The specimens agreeing best with the description given by Heuglin, of *Galerita modesta*, I have seen, appear to be the types of *Heliocorys modesta giffardi*, Hartert. These were collected by Captain W. Giffard at Gambaga, and were separated as a distinct subspecies solely from a comparison of the types with the specimens in the British Museum labelled "*H. modesta*," which after all belong to the true *Mirafra bucolica*, Hartl. Yet, as I have already remarked, I can find no definable character for their separation.

The late Dr. Stark was led into the error of including this species in the Fauna of South Africa owing to an immature Lark from Clan William having the name "*Heliocorys modesta*" written on the label. This specimen I have seen, and describe below as the immature of *Calendula crassirostris*.

Genus IX. CALENDULA.

Very similar to *Galerita*, but differs in the bill being much stouter, with the basal half of the lower mandible buff and sharply defined, and the crest-feathers shorter and broader; secondaries reaching to the tip of the wing; bastard-primary more than half an inch in length, but falling short of the tip of the primary-coverts; tarsi and feet of moderate size, the hind claw long and very slightly curved. Plumage of upper parts brown, mottled with dark centres to the feathers.

Type.

Calendula, Swains. Classif. B. ii. p. 292 (1837). . . . C. crassirostris.

Calendula crassirostris.

Alauda crassirostris, Vieill. N. Dict. i. p. 373 (1816) *Cape Col.*

Calendula crassirostris, Sharpe, Cat. B. M. xiii. p. 639 (1890) *Lt. Namaqua, Cape Col. Orange R. Col.*; Kuschel, J. f. O. 1895, p. 344, *egg;* Shelley, B. Afr. I. No. 223 (1896); Nehrkorn, Kat. Eiers. p. 134 (1899) *egg;* Stark, Faun. S. Afr. B. i. p. 202 (1900).

Alauda magnirostris, Steph. Gen. Zool. xiv. p. 27 (1826) *S. Afr.*
Galerita modesta (nec Heugl.) Stark, Faun. S. Afr. B. i. p. 204 (1900) *Clan William.*

Adult. Very similar in general appearance to *Galerita cristata*, but with a very much thicker bill, of which the basal half of the lower mandible is buff and sharply defined; the crest is much shorter, and the abdomen has a faint tinge of yellow. Upper parts mottled, ashy brown with blackish centres to the feathers; tail blackish brown, slightly paler, and more ashy on the centre feathers; outer feather with a narrow buff external and terminal edge, and a very narrow whitish outer edge to the penultimate feather; under surface of the wing dusky ash, with partial, rather narrow, rufous buff inner margins to the quills and the under wing-coverts mostly buff, the feathers being broadly edged with that colour. Sides of the head with a broad eyebrow, space under the eye and the cheeks buff; the remainder blackish brown, mottled, with buff edges to the feathers. Under parts buff, with a slight yellow shade on the abdomen; an imperfect black band down the sides of the throat, widening out somewhat between the crop and sides of the lower neck; lower throat, front of chest and flanks boldly marked with blackish brown centres to the feathers. Iris brown; upper mandible dark horn colour, lower one buff with the end half dark horn colour. Total length in the flesh 7 inches, culmen 0·65, wing 3·7, tail 2·3, tarsus 1·1. ♀, 23. 1. 74. Stellendorf (Shelley). A male labelled "29. 7. 62, Little Namaqualand (Andersson)," is slightly larger: culmen 0·7, wing 3·8, tail 2·4.

Immature. Differs in the plumage of the upper parts being mottled with partial white edges to the feathers inclining to spots, most strongly marked on the middle of the crown and nape; the buff on the outer pair of tail-feathers extends over nearly the whole of the outer webs; bill more uniform dark brown. Wing 3·8 inches. Clan William (Cape Mus.).

The Thick-billed Crested-Lark inhabits western South Africa, south of the Cunene river.

According to Andersson, this species is pretty generally diffused over Damara and Great Namaqua-lands; it frequents localities covered with grass and dwarf vegetation, and frequently those which are of a rocky character. Mr. Layard writes: "This fine Lark frequents equally the cultivated and bush-covered lands. It feeds on insects and seeds, and makes a rough nest in September in a depression of the soil under the shelter of a low bush, or large clod of earth, and lays four or five eggs of a very pale cream colour, profusely

dotted throughout with small light brown and purple spots. Axis 0·9 inch, diameter 0·65." He found the species plentiful near Cape Town, and very evenly distributed throughout the Colony.

In the British Museum there are specimens from Little Namaqualand, Ceres, Stellendorf, Colesberg, Hopetown, and the Orange River Colony.

I have had some doubt as to the advisability of placing the last two species in genera by themselves, for *Heliocorys modesta* and *Calendula crassirostris* are scarcely more than somewhat abnormal forms of *Galerita*.

Genus X. ALAUDA.

Bill moderate; culmen shorter than the middle toe with claw; nostrils hidden by bristly feathers. Wing of ten primaries, the first a small bastard-primary less than half an inch in length; the next three primaries about equal and the longest; secondaries reaching nearly or quite to the end of the wing. Tarsi and feet pale and of moderate size; hind claw long, rarely shorter than the hind toe and very slightly curved. Plumage above brown or ashy, with blackish centres to the feathers; no elongated crest feathers.

	Type.
Alauda, Linn. S. N. i. p. 287 (1766).	A. arvensis.
Aëthocorys, Sharpe, Bull. B. O. C. xii., p. 62 (1902) . .	A. personata.

Alauda arvensis and its nearest allies or subspecies, some half a dozen in number, range over the greater part of Europe, Asia and North Africa, and are apparently confined to the Palæarctic region. One less typical form, *A. personata*, inhabits Somaliland. Until quite recently this latter species has been placed in the genus *Spizocorys*, to which it does not belong; it can be distinguished from *Alauda*, as defined by Dr. Bowdler Sharpe (Cat. B. M. xiii. p. 513), in having a shorter hind claw.

Alauda personata.

Spizocorys personata, Sharpe, P. Z. S. 1895, p. 471 *Somali;* Shelley, B. Afr. I. No. 190 (1896); Donaldson Smith, "Through Unknown Afr." p. 126, fig. (1897).

Aëthocorys personata, Sharpe, Bull. B. O. C. xii. p. 62 (1902).

Type. Upper parts pale brown, with very narrow angular dark shaft-stripes on the crown and much broader ones on the upper back; lesser wing-coverts uniform pale brown; remainder of the wing-coverts and the secondaries dark brown with broad edges of pale brown; primaries more uniform dark brown, with the outer web of the first long one white; outer tail-feather white with a large wedge-shaped dusky patch on the inner web; penultimate feather with nearly the whole of the outer web white, remainder of tail blackish brown; sides of head black, with an incomplete eyebrow and fore part of cheeks and ear-coverts white; remainder of ear-coverts and the sides of the neck ashy brown; chin and upper throat white; lower throat, crop and flanks pale ashy brown, blending into rufous buff on the remainder of the breast and thighs; abdomen and under tail-coverts slightly paler rufous buff; under surface of the wings dusky ash, the coverts shading into rufous buff along the bend of the wing, and the inner margins of the quills narrowly washed with that colour. Total length 5 inches, culmen 0·45, wing 3·35, tail 2·0, tarsus 0·8. ♂, 3. 8. 94. Sassabana (Dr. A. Donaldson Smith).

The Masked Sky-Lark inhabits Somaliland.

This species is known to me only from the type in the British Museum. It was discovered by Dr. Donaldson Smith at Sassabana, on August 3, 1894. The specimen is not in full plumage, but may be readily distinguished from all the known Larks from Tropical Africa, of a similar size and appearance, by its having a distinct small bastard primary.

Genus XI. PSEUDALÆMON.

Bill long and stout; culmen longer than the middle toe with claw; nostrils hidden. Wing of ten primaries; bastard primary small, scarcely more than half the length of the culmen and shorter than the inner toe with claw; longest secondary reaching nearly to the tip of the wing; no white edge to the first long primary. Tail very short, not extending beyond the upper tail-coverts by more than the length of the culmen. A black patch on each side of the crop; tarsi and feet pale; toes and hind claw short.

Type.

Pseudalæmon, Lort Phillips, Ibis, 1898, p. 400 . . . P. fremantlei.

KEY TO THE SPECIES.

a. Sandy rufous; breast and flanks less striped . *fremantlei.*
b. Ashy grey; breast and flanks more striped . . *delamerei.*

Pseudalæmon fremantlei.

Calendula fremantlii, Lort Phillips, Bull. B. O. C. vi. p. 46 (1897); id. Ibis, 1897, p. 448 *Goolis Mts.*

Pseudalæmon fremantlii, Lort Phillips, Ibis, 1898, p. 400, pl. 9, fig. 2 *Somali.*

Adult male. Above pale sandy brown, whiter on the hind neck, with dark centres to the feathers, narrower on the crown and neck than on the back, and absent on the upper tail-coverts; wings brown with fairly broad sandy brown edges to the feathers; tail short and square, dark brown with very narrow sandy edges, and the greater part of the outer web of the tail and a portion of the outer webs of the penultimate feathers white; sides of the head, with the cheek, space under the eye and a broad eyebrow white, beneath which is a blackish band through the eye and uppermost ear-coverts, branching off downwards round the fore part of the ear-coverts; the remainder of the ear-coverts deep chestnut, with the front lower quarter white; throat white, the lower portion flanked on each side by a large patch of black; under surface of the body white, shaded with tawny buff on the crop and flanks; a few brown spots on the lower throat and many of the feathers of the crop and flanks with tawny centres or shaft-stripes to the feathers; under surface of the wing dusky with the coverts and partial inner edges of the quills rufous buff. Iris light hazel; bill pale horn brown; tarsi and feet flesh colour. Total length 5·5 inches, culmen 0·7, wing 3·4, tail 1·9, tarsus 0·85. ♂, 18. 2. 97.

Adult female (*type*). Similar in plumage to the adult male. Total length in the flesh 5·7 inches, culmen 0·75, wing 3·3, tail 1·7, tarsus 0·75. ♀, 16. 2. 97. Gedais (Lort Phillips).

Freemantle's Short-tailed Lark inhabits Somaliland.

I cannot find anything recorded regarding the habits of this peculiar species, although it is apparently plentiful in Somaliland, at least in certain localities.

It is the type of *Pseudalæmon*, a genus which belongs to the

section of Larks in which the nostrils are hidden by plumelets, the bastard primary short and the secondaries reaching nearly to the tip of the wing; but the genus is strongly characterised by the long stout bill and short tail, and should, I consider, be placed between *Alauda* and *Melanocorypha*.

Pseudalæmon delamerei.

Pseudalæmon delamerei, Sharpe, B. O. C. x. p. 102 (1900) *Athi River*.

Type. Above buff, whiter on the hind neck, with broad blackish centres to the feathers, narrower on the crown and neck than on the back, and not extending on to the upper tail-coverts, which are uniform; wings blackish brown with fairly broad sandy buff edges to the feathers; tail short, square, dark brown, with very narrow white edges, and having the greater part of the outer webs of the tail and a portion of the outer web of the penultimate feathers white; sides of the head, with the cheeks, space under the eye and a broad eyebrow white, beneath which is a blackish band through the eye and the uppermost ear-coverts, branching off downwards round the front half of the ear-coverts; the remainder of the ear-coverts blackish brown, with the front lower quarter ashy white; throat white, the lower portion flanked on each side by a large patch of black; under surface of the body white, shaded with tawny buff on the crop and flanks; several blackish spots on the lower throat and sides of the crop, and a few of the feathers of the flanks streaked with black and a few with pale rufous; under surface of the wings dusky with the coverts and partial inner edges of the quills rufous buff. Total length 5·5 inches, culmen 0·65, wing 3·45, tail 2·0, tarsus 0·75. ♂, 17. 11. 99. Athi river (Lord Delamere).

Delamere's Short-tailed Lark is known, I believe, only by the type, which was shot by Lord Delamere at the Athi river, in British East Africa, on November 17, 1899.

This Lark closely resembles *P. fremantlei* in structure, size, and general pattern of the plumage, and as the latter is known only from specimens killed in February, I should not be surprised if these prove to be seasonal plumages of one species. *Mirafra nivosa* is known to be subject to a very similar change in the spring and autumn of the year.

Genus XII. MELANOCORYPHA.

Bill large and stout; culmen shorter than the middle toe with claw; nostrils hidden by stiff plumelets; wing of ten primaries, the first or bastard primary very small; secondaries fall short of tip of wing by not less than the length of the tarsus.

Type.

Melanocorypha, Boie, Isis, 1828, p. 322 . . . . . M. calandra.
Calandrina, Blyth, Journ. A. S. Beng. xxiv. p. 265 (1859) M. bimaculata.

This is essentially a Palæarctic genus, of which only one species occurs during its winter migration in the north-eastern portion of the Ethiopian Region.

Melanocorypha bimaculata.

Alauda bimaculata, Ménetr. Cat. Rais. Canc. p. 37 (1832).
Melanocorypha bimaculata, Sharpe, Cat. B. M. xiii. p. 555 (1890) *Abyssinia;* Hartert, Kat. Vög. Mus. Senck. p. 39 (1891) *Dongola;* Shelley, B. Afr. I. No. 184 (1896).

Adult male. Above pale brown, with fairly broad blackish brown shaft-bands on the crown, mantle, and middle back; lower back and upper tail-coverts uniform; wings brown, with paler buffy brown edges to the feathers; tail square, blackish brown, with the sides of the feathers edged with tawny buff, very broadly on the centre pair; all the other tail-feathers with large terminal white spots, mostly confined to the inner webs; sides of the head, with the cheeks and a broad eyebrow white, beneath which is a blackish band through the eye; ear coverts brown; throat white, ending in a broad black collar which is divided in two by white feathers; under surface of the body white, washed with pale brown on the crop and flanks; sides of crop mottled with dark centres to the feathers; under surface of the wing ashy brown, with a narrow line of coverts next to the bend of the wing broadly edged with brownish buff. Iris hazel; bill horn colour, paler on the lower mandible; tarsi and feet flesh colour. Total length 7 inches, culmen 0·7, wing 4·6, tail 2·2, tarsus 1·05.

Adult female. Similar in plumage to the male. Total length 6·8 inches, culmen 0·7, wing 4·6, tail 2·2, tarsus 1·0.

The Eastern Calandra Lark ranges from the Blue Nile to North-western India.

In the British Museum there is a specimen from Abyssinia. According to Heuglin, it appears in North-east Africa, south-

ward to the Blue Nile, and in Abyssinia, as a winter visitor, when it is to be met with in flocks in the fields and waste land, and is very shy. Rüppell's specimens came from Dongola. Mr. Hawker has recently procured a male and two females, at Wad Thali, on February 2, 1901, during his excursion up the Nile, and I have taken my descriptions from these specimens.

Genus XIII. TEPHROCORYS.

Bill somewhat Finch-like in form; nostrils hidden by plumelets. Wing of nine primaries only; the first three the longest and nearly equal; first primary with a pure white outer edge; secondaries reaching nearly or quite to the end of the wing. Tarsi and feet moderate; the hind claw shorter than the hind toe. Sexes similar in plumage. Adults with the crown nearly uniform bright rufous, and generally with a large uniform rufous or black patch on each side of the throat. Young with the crown and sides of crop blackish.

	Type.
Tephrocorys, Sharpe, P. Z. S. 1874, p. 633	T. cinerea.

This genus is confined to the African continent, and is represented by two well marked species, *T. cinerea* and *T. ruficeps*, to which I have added a new species, *T. blanfordi*, founded upon a specimen procured by Dr. Blanford, at Senafé, in Northern Abyssinia.

KEY TO THE SPECIES.

a. Crown rufous (Adults).

a[1]. Forehead bright rufous like the crown; a patch of uniform bright rufous on the sides of the crop . . . . . *cinerea*.

a[2]. Less rufous on the flanks; (?) adults after the first moult.

a[3]. Darker. Winter plumage . typical *cinerea*.

b[3]. Paler. Breeding plumage faded. type of *spleniata*.

b^2. More rufous on the flanks. Autumn moult, possibly the first moult . type of *anderssoni*.

b^1. Forehead more dusky brown, contrasting with the crown; a patch of black on the sides of the lower throat.

c^2. Larger and darker; wing 3·55, tarsus 0·8; black neck-patch larger and well marked; edges of feathers of back and wings not sandy buff . . . . . *ruficeps*.

d^2. Smaller and paler; wing 3·2, tarsus 0·75; black neck-patch hardly distinguishable; edges of feathers of the back and wings sandy buff . . . . . *blanfordi*.

b. Crown and sides of crop blackish; upper parts with numerous white spots (Young).

Tephrocorys cinerea.

Alauda cinerea, Gm. S. N. i. p. 798 (1788).

Tephrocorys cinerea, Sharpe, P. Z. S. 1874, p. 633; Büttik. Notes Leyd. Mus. 1888, p. 241 *Humpata;* Sharpe, Cat. B. M. xiii. p. 561 (1890) *Little Namaqualand, Cape Town, Natal, Transvaal;* id. Ibis, 1891, p. 260 *Kikuyu;* Distant, Naturl. Transvaal, p. 168 (1892) *Pretoria;* Bocage, Jorn. Lisb. 1893, p. 164 *Galanga;* Kuschel, J. f. O. 1895, p. 344 *egg*; Shelley, B. Afr. I. No. 185 (1896); Nehrkorn, Kat. Eiers. p. 132 (1899) *egg;* Jackson, Ibis, 1899, p. 624 *Naiwasha;* Stark, Faun. S. Afr. B. i. p. 222 (1900); Marshall, Ibis, 1900, p. 243 *Mashona;* Hartert, Nov. Zool. 1900, p. 47 *Athi River*.

Alauda spleniata, Strickl. Contr. Orn. 1852, p. 152 *Damara*.

Tephrocorys spleniata, Sharpe, Cat. B. M. xiii. p. 563 (1890); Shelley, B. Afr. I. No. 186 (1896); Stark, Faun. S. Afr. B. i. p. 223 (1900).

Megalophonus anderssoni, Tristram, Ibis, 1869, p. 434 *Otjimbinque;* Sharpe, P. Z. S. 1874, p. 634.

Tephrocorys anderssoni, Sharpe, Cat. B. M. xiii. p. 564 (1890) *Otjimbinque;* Shelley, B. Afr. I. No. 188 (1896); Stark, Faun. S. Afr. B. i. p. 224 (1900).

Megalophonus ruficeps (nec Rüpp.), Fisch. J. f. O. 1885, p. 137 *Naiwasha*.

Adult male. Crown uniform bright chestnut, a few of the feathers narrowly edged with buff; back mottled with pale rufous tinted ashy brown and broad dark centres to the feathers; lower back nearly uniform and shading into cinnamon on the upper tail-coverts, the larger ones of which have dark brown angular centres; wing dark brown, with the least coverts pale brown and the other feathers edged with pale rufous-shaded brown,

broadest on the coverts and secondaries and with the outer web of the first primary white; tail brownish black, the centre pair of feathers with broad pale edges, the outer pair having a white outer margin extending round the end of the feathers, and the penultimate pair having narrow white outer margins; a broad eyebrow and the cheeks white, the latter shading into pale ashy brown on the ear-coverts and sides of neck; a small dusky band in front of the eye; under parts white, slightly washed with rufous brown on the lower throat and on the flanks; a large patch of chestnut on each side of the crop; under surface of wings ashy brown, with narrow rufous buff inner edges to the quills; outer under wing-coverts with broad buff edges. "Iris dark hazel; bill black with the base brown; legs dark brown" (T. E. Buckley). Total length 6·6 inches, culmen 0·45, wing 3·7, tail 2·7, tarsus 0·85. ♂, 3. 6. 81. Newcastle (A. E. Butler).

Adult female. Like the male, but the feathers on the back of the crown have black shaft-stripes. Wing 3·6, tail 2·5. ♀, 5. 7. 81. Newcastle.

Type of Alauda spleniata, Strickl. Similar to the last, but much paler, with the rufous portions of the plumage light cinnamon. Total length 5·8 inches, culmen 0·55, wing 3·6 (moulting), tail 2·1, tarsus 0·8 (Cambridge Mus.).

Type of Megalophonus anderssoni, Tristr. Darker and brighter, with the rufous on the sides of the breast extending back to the sides of the under tail-coverts. Total length 5 inches, culmen 0·45, wing 3·15, tail 2·15 (moulting), tarsus 0·8. 13. 3. 65. Otjimbinque (Liverpool Mus.). A very similar specimen, procured at the same place three days earlier, also by Andersson, measures: total length 5·6 inches, culmen 0·55, wing 3·5 (moulting), tail 2·1, tarsus 0·8.

Young. Very much darker than the adults; crown, ear-coverts and dark patch on sides of crop blackish brown like the upper parts generally, and with terminal white spots to the feathers placed in the middle of the broad edges. ♀, juv., 30. 9. 76. British Kaffraria (F. Barratt).

The Southern Red-capped Lark ranges from the Cape of Good Hope into Benguela and northward to the Equator in Eastern Africa.

Anchieta has collected specimens at Benguela, Ambaca and Galanga, where they are known to the natives as the "Tioco," and Van der Kellen has met with others at Humpata, on the Cunene.

Professor Barboza du Bocage (Orn. Angola, p. 374) remarks: "Two females procured by Anchieta, one at Benguela and the other at Ambaca, are scarcely distinguish-

able from specimens obtained in Cape Colony, Natal and Damaraland, being only slightly smaller and having the shade of the plumage darker and brighter; they apparently agree well with the type of *Megalophonus anderssoni*, Tristram."

Regarding these Larks in South-Western Africa, Chapman writes: "*Alauda spleniata* (Strickland). Common in Damara and Great Namaqualand, as also at the Cape, and Andersson found them very abundant in Damara and Great Namaqua, where they breed. *T. cinerea* is a common species throughout Cape Colony, and towards the end of August the flocks break up for the pairing season. From Natal Messrs. Butler, Feilden and Reid write: "Found in abundance throughout the Cape Colony, though somewhat local and attaching itself to particular spots. These neat little birds are found on the roads or broad tracts, over the sandy portions of the veldt. They are wonderfully tame, and frequently crouch on the approach of a horse, man or waggon, instead of taking flight. The Kaffirs occasionally knock them over with their whips. The nest is a neat structure, not unlike that of our Sky Lark, composed of dry grass, and concealed under a tussock of grass on the open veldt. The eggs are three, frequently only two, in number, pale greenish white, freckled and blotched with brown. In a nest taken by Butler they measured 0·95 by 0·55 inch, but these are doubtless unusually elongated, for in three nests taken by Reid the average size is 0·85 by 0·6 inch. A young bird, obtained by Butler, which had just left the nest, was beautifully variegated about with dark brown and buff, not the least like the old bird that was feeding it." Mr. T. E. Buckley came across a scattered flock of them near Pietermaritzburg in May, and observes: "They run fast and are extremely difficult to see." Mr. T. Ayres, writing from Potchefstroom, remarks: "These Larks are easily distinguished when in the field by the chirruping note

they utter on rising; one winter they were much more plentiful than usual and outnumbered all the other Larks." Near Pretoria the species has been obtained by Mr. Distant. In Mashonaland, according to Mr. Guy Marshall, this Lark is "everywhere abundant in open country. It is a fearless little bird, frequenting the open spaces in the town and readily permitting a very close approach. During the courting season the male has a very pretty way of rising; after first flying up he will swoop downward a short distance, then rise abruptly straight upwards for several feet with closed wings, turning gently over and swooping down and up again several times in succession, then fluttering away skyward, singing sweetly all the while. In the end of winter these birds congregate in flocks, which sometimes contain as many as 200 or 300 individuals."

The distance between Salisbury, in Mashona, and Naiwasha Lake is about 1,100 miles, and throughout this vast territory the species has not yet been recorded, but at the latter place, Mr. Jackson has collected specimens in April and August and further north in the Kikuyu country in September, showing that this species is neither rare nor migratory in British East Africa. Dr. Ansorge has also met with it on the Athi plains, and I have examined several specimens from this district in Lord Delamere's collection and find that they agree perfectly with examples from Natal.

Tephrocorys ruficeps.

Alauda ruficeps, Rüpp. N. Wirb. Vög. p. 102, pl. 38, fig. 1 (1835) *Simien.*
Tephrocorys ruficeps, Sharpe, Cat. B. M. xiii. p. 563 (1890) *Shoa, Abyssinia;* id. P. Z. S. 1895, p. 471 *Somali;* Shelley, B. Afr. I. No. 187 (1896); Grant, Ibis, 1900, p. 137; 1901, p. 627 *S. Abyssinia.*

Adult. Very similar to *T. cinerea*, but with less pale edges to the feathers, giving the back and wings a blacker appearance; the chestnut

crown inclining to dusky blackish towards the forehead, and narrowly edged at the sides with black, while on the back of the crown are some strongly marked black shaft-stripes; ear-coverts dusky; under parts with the throat, sides of neck, centre of breast and the under tail-coverts white; a jet black patch on each side of the base of the throat passing into pale rufous, with which colour the whole crop, sides of body and the thighs are washed. "Iris brown, bill and legs dark." Total length 5·9 and 6·1 inches, culmen 0·5 and 0·45, wing 3·55, tail 2·3, tarsus 0.8. ♂ and ♀, 22. 1. 99. Jifadensa (Lovat).

Young. Similar, but darker than the young of *T. cinerea* already described, the crown and mantle nearly black and almost spotless.

The Abyssinian Red-capped Lark inhabits Somaliland and Abyssinia.

Dr. Donaldson Smith collected two specimens at Sheik Mahomed in November, which have been referred to this species, the range of which I cannot trace further south, for I believe that *Megalophonus ruficeps*, Fischer (J. f. O. 1885, p. 137), from Naiwasha, is referable to the southern *T. cinerea*.

Lord Lovat met with the present species at Jeffi Dunsa and Balti in January, during his journey from Berbera to the Blue Nile, and writes: "It is common at all elevations of Shoan Abyssinia." Dr. Ragazzi has collected specimens of this Lark at Fallé in December and January, and found it frequenting the vicinity of native habitations. Antinori met with the species in this country at Lice and the valley of Waddeccia in June and November, and further north he obtained a specimen at Matacrur in January. Rüppell records the species as abundant in Abyssinia, where he first discovered it. According to Heuglin this Lark is most plentiful in the highlands, from 6,000 to 11,000 feet. He met with the species as far north as Hamasien, but not further west than Lake Tana.

Tephrocorys blanfordi n. sp. (Pl. 21, fig. 2).

Calandrella anderssoni (nec Tristr.) Blanford, Geol. and Zool. Abyss. p. 389 (1870) *Senafé;* Sharpe, P. Z. S. 1874, p. 634.

Tephrocorys ruficeps, Sharpe, Cat. B. M. xiii. p. 563 (1890) part, spec. *c*., *Senafé*.

Type. Upper parts much paler than in the adult of *T. ruficeps*, all the feathers being broadly edged with sandy brown; the forehead very slightly duller than the crown; a few black shaft-stripes at the back of the crown; ear-coverts pale brown, with only a trace of a black patch on the sides of the neck; crop, sides of the body, and the thighs tawny buff. Total length 5·0 inches, culmen 0·4, wing 3·2, tail 2·0, tarsus 0·75. ♂, 24. 2. 68. Senafé (Blanford).

Blanford's Red-capped Lark inhabits Northern Abyssinia. It is known to me only from the type, which was shot by Dr. Blanford at Senafé in the Tigré district of Abyssinia on February 24, 1868. Here he found these small Larks abundant on stony ground, keeping much in large companies, and highly social, precisely like *Calandrella brachydactyla*. I have named this bird after Dr. Blanford, who first regarded it as distinct from *T. ruficeps*. It is certainly more sharply characterised than *T. spleniata* (Strickl.) and *T. anderssoni* (Tristr.) which are entered as subspecies (Cat. B. M. xiii. pp. 563, 564). In 1874 (P. Z. S. p. 634) Dr. Bowdler Sharpe remarked that this specimen seemed to him to be *T. ruficeps* in winter plumage. I find, however, that it differs to the same extent from two males and a female shot by Lord Lovat in January, as it does from all the other specimens I have seen of *T. ruficeps*.

Genus XIV. CALANDRELLA.

Bill somewhat variable in form, but generally Finch-like; nostrils hidden by plumelets. Wing of nine primaries; the first three the longest and nearly equal; first primary with a pure white outer edge; secondaries reaching nearly or quite to the tip of the wing. Crown like the mantle, pale brown with dark centres to the feathers. Sexes similar, and plumage of the young very like that of the adults in colouring.

	Type.
Calandrella, Kaup. Natürl. Syst. p. 39 (1829) . . .	C. brachydactyla.
Spizocorys, Sundev. Av. Meth. Tent. p. 55 (1873) . .	C. conirostris.

KEY TO THE SPECIES.

a^1. Throat with few or no spots.
  a^2. Bill stouter and shorter; pale pattern of outer tail-feather sandy buff . . . . *brachydactyla.*
  b^2. Bill longer and more slender; pale pattern of outer tail-feather white . . . . . *acutirostris.*
b^1. Lower throat much spotted.
  c^2. Bill shorter and stouter; culmen much curved.
    a^3. Larger; wing 3·3 to 3·55.
      a^4. Upper parts mostly ashy grey . . *athensis.*
      b^4. Upper parts mostly sandy brown . *somalica.*
    b^3 Smaller; wing 3·0 to 3·2.
      c^4. Bill smaller; plumage darker and less sandy; no crest . . . . . *conirostris.*
      d^4. Bill larger; general plumage above sandy buff, beneath nearly white; a distinct crest . . . . . *starki, n. sp.*
  d^2. Bill longer; culmen less curved.
    c^3. Bill more wedge-shaped . . . . . *sclateri, n. sp.*
    d^3. Bill less wedge-shaped. . . . . *razæ.*

Calandrella brachydactyla.

Alauda brachydactyla, Leisler, Wetterau Gesellsch. Ann. iii. pp. 357-359 (1814).

Calandrella brachydactyla, Sharpe, Cat. B. M. xiii. p. 580 (1890) *Abyssinia;* Shelley, B. Afr. I. No. 192 (1896).

Adult. Above mottled sandy brown, with blackish brown centres to the feathers of the crown, mantle and upper tail-coverts; rump uniform rufous tinted pale brown; wing dark brown, with sandy brown edges to the feathers, broad on the coverts and secondaries and narrow on the primaries, excepting the first long quill, which has the outer web white; under surface of the wing with the coverts and inner edges of the quills white. Tail blackish brown, the centre pair of feathers broadly edged with sandy brown;

buff pattern extending in a wedge-shape over half the outer feather from across the end to a point near the base of the outer edge; penultimate feather with half the outer web buff, which colour borders the end. Sides of head with a broad eyebrow, front of the eye and the cheeks buff; ear-coverts uniform pale brown; a few dusky markings behind the gape and on the sides of the upper throat. Sides of the upper neck and the under parts generally buffy white; sides of the lower throat separated from the sides of the neck by a patch of black; crop with faintly marked tawny shaft-stripes and a slight rufous buff shade on the sides; flank rather more rufous. Iris brown; bill pale whitish brown, darkest on the culmen; legs pale yellowish brown. Total length 5·3 and 5·7 inches; culmen 0·4; wing 3·3 and 3·6; tail 2·0 and 2·3; tarsus 0·75 and 0·80. ♂, 27. 12. 67. Zoulla (Blanford). ♂, 7. 3. 68. Egypt (Shelley).

Young. Like the adults but with the crown and mantle mottled with sandy white tips to the feathers and subterminal blackish bars; crop and flanks with a very few obscure dusky spots.

The common Short-toed Lark inhabits North-east Africa, Southern Europe, and ranges eastward into Turkestan and India.

This species occurs in North-east Africa during its winter migration, and I fail to trace its range further south than Kordofan. Dr. Blanford found these Larks not rare on the shores of Annesley bay, but never met with them in the highlands, and according to Heuglin they frequent the open country, appearing in North-east Africa early in September, and during the winter collect in enormous flocks in Kordofan, Sennaar and Taka, and migrate again northward in February and March, singly or in scattered parties. With regard to the migration, Dr. A. E. Brehm observed these Larks travelling northward through Upper Egypt from March 17th to 20th, and met with them again at Khartoum on November 13th, on their return journey, and in the following year found them in immense numbers at Kamlin on the Blue Nile, 15° N. lat. on March 3rd and 4th, 1851, starting on their migration down the Nile for their breeding haunts in Europe.

Calandrella acutirostris.

Calandrella acutirostris, Hume, Lahore to Yark. p. 265 (1873); Sharpe, Cat. Birds B. M. xiii. p. 585 (1890); id. Bull, B. O. C. xii. p. (1902).

Adult. Upper parts mottled, pale brown with blackish centres to the feathers, these dark centres less strongly marked on the hind neck and absent from the upper tail-coverts, which are of a slightly more rufous shade; margins of primary-coverts, of some of the greater-coverts and the outer web of the first primary white. Tail blackish; the outer feather half blackish and half white, these colours meeting along a diagonal straight line; penultimate feather with a narrow white outer margin. Ear-coverts uniform brown; a dusky patch in front of the eye; remainder of sides of head, upper half of sides of neck and the under surface generally, white; crop slightly tinted with brown, most strongly so towards the sides, where it passes into the pale brown of the lower half of the sides of the neck; lower throat with a few, almost obsolete, dusky brown spots; flanks slightly shaded with brown; under surface of wings dusky with rufous buff inner margins to the quills; under wing-coverts mostly pure white. "Iris brown; bill dusky on culmen, and yellowish horn at the sides and below; tarsi and feet brownish flesh colour" (Scully). Total length 5·7 inches, culmen 0·45, wing 3·4, tail 2·2, tarsus 0·85. ♀, 14. 11. 99. Athi R. (Delamere).

Hume's Short-toed Lark ranges from Turkestan and India to the Athi river in British East Africa.

The occurrence of this species in Africa is known to me only by the specimen I have described, which was shot by Lord Delamere, November 14th, 1899, at the Athi river on the same day as he shot the type of *Spizocorys athensis*, Sharpe.

This species much resembles *C. brachydactyla*, from which it may be most readily distinguished by its bill being longer and slighter.

It is very probable that the Short-toed Larks, when they pass in large flocks on migration, as is their custom, are joined by scattered individuals of the allied species they meet by the way, and this may account for more than one species being met with in the same flock: for such is known to be of common occurrence with the Yellow-Wagtails, and we have good

reason to believe that the Short-toed Larks have the same sociable habits.

Calandrella athensis.

Spizocorys athensis, Sharpe, B. O. C. x. p. 101 (1900) *Athi R.*

Type. In colouring and pattern of plumage this species is exactly like *Alaudula bætica*, but it differs in being slightly larger, in having the bill decidedly stronger, the secondaries half an inch longer and reaching to the tip of the wing. Above mottled blackish brown with pale ashy edges, very slightly tinted with rufous on some of the wing-coverts; outer margin of the first long primary white; tail with the outer feather white or buff with a dusky wedge-shaped patch on the inner web (not reaching to the end of the feather); penultimate feather with the outer web almost entirely white and the next feather partially edged with white; sides of head with a broad eyebrow and cheeks white; in front of eye a small dusky line; a band of dusky brown formed by the lower ear-coverts extending forward to the gape, from which a mottling of a few dusky spots extend down the sides of the upper half of the throat; under-parts generally white; sides of neck white, with a black patch between it and the crop; crop strongly marked with elongated blackish spots inclining to narrow shaft-stripes on the flanks; both slightly washed with brownish buff; under surface of the wings dusky brown with narrow whitish inner margins to the quills; the under wing-coverts slightly tinted with buff. Total length 5·5 inches, culmen 0·45, wing 3·55, tail 2·2, tarsus 0·85. ♂, 14. 11. 99. Athi R. (Delamere).

The Athi Short-toed Lark inhabits British East Africa.

The only specimens known to me of this Lark are the typical examples which were discovered by Lord Delamere at the Athi river, November 14th, 1899, on the same day that he shot the only African specimen yet known of *Calandrella acutirostris*.

Calandrella somalica.

Alauda somalica, Sharpe, P. Z. S. 1895, p. 472 *Somali;* Shelley, B. Afr. I. No. 194 (1896); Elliot, Field Columb. Mus. i. No. 2, p. 27 (1897) *Silo Plain.*

Type. Above mottled, tawny shaded sandy brown, with dark brown centres to the feathers; outer edge of first long primary white; tail with the

outer feather sandy white, with a dusky wedge-shaped patch on the inner web; penultimate feather with the white confined to the outer web; eye-brow, feathers under the eye, and the ear-coverts sandy buff, with a blackish mark in front of the eye and on the cheeks; ear-coverts and sides of the upper throat with a few dark shaft-streaks; sides of neck sandy brown with dark brown shaft-stripes; under surface generally white, shaded with sandy brown on the crop and flanks; lower throat with dark brown angular spots; flanks slightly streaked with rufous shaded brown; under wing-coverts and inner margins of the quills rufous buff, with the remainder of the quills dusky. Total length 5·5 inches, culmen 0·5, wing 3·55, tail 2·1, tarsus 0·85. ♂, 23. 7. 94. The Haud (Donaldson Smith).

The Somali Short-toed Lark inhabits Somaliland.

In the British Museum there is the type, procured by Dr. A. Donaldson Smith in The Haud, July 23rd, 1894, and two specimens collected by Mr. C. V. A. Peel, at Eyk. Mr. Elliot also met with the species on the Silo Plain. It would appear to have a very restricted range, for I do not find it recorded from beyond the limits of the Somali country. It is a typical *Calandrella*, with the longest secondaries reaching to the tip of the wing and the shortest falling short of the end of the wing by one inch.

Calandrella conirostris.

Alauda conirostris, Sundev. Œfv. K. Vet. Ak. Förh. Stockh. 1850, p. 99 *Magaliesberg*.

Spizocorys conirostris, T. Ayres, Ibis, 1884, p. 231 *Potchefstroom;* Sharpe, Cat. Birds B. M. xiii. p. 564, 1890 pt. *Ondonga, Gt. Namaqua, Transvaal;* Shelley, B. Afr. I. No. 189 (1896); Stark, Faun. S. Afr. B. i. p. 220 (1900).

Adult. Above mottled with broad brownish black centres and pale brown edges to the feathers; outer web of the first long primary white; tail with terminal white ends to the feathers, the white pattern extending over rather more than the outer webs of the outer pair of feathers, diminishing in amount on the penultimate ones but extending down the whole length and down about two-thirds of the outer web of the next feather; sides of the head, with a broad eye-brow and a patch under the eye to the bill white, with a black band in front of the eye; a black line from the gape margining the white beneath the eye and losing itself in the blackish brown of the ear-coverts,

which latter gradually fade towards the cheeks; upper half of the throat white, mottled with black on the sides and across the middle of this white patch; remainder of the under surface tawny buff, fading into pale buff on the abdomen; crop thickly spotted with brownish black, and a few less distinct brown streaks occurring here and on the flanks; under surface of the wings dusky brown washed with rufous buff on the coverts and inner margins of the quills. "Iris light hazel; bill light red brown; tarsi and feet pale" (T. Ayres). Total length 4·7 inches, culmen 0·4, wing 2·9, tail 2·7, tarsus 0·75. ♀, 28. 10. 44. Magaliesberg (Wahlberg).

Young. Similar to the adult but rather darker, and the upper parts more shaded with rufous excepting on the crown, which is black; wing-coverts and crop with pale terminal edges inclining to white shaft-spots. ♂, juv., 31. 1. 78. Potchefstroom (T. Ayres).

The colouring of Wahlberg's specimen is intermediate between the dark specimens collected by Mr. T. Ayres at Potchefstroom, in June and October, and the pale ones obtained by Andersson in Ovampoland and Great Namaqualand in June and November.

The Red-billed, Short-toed Larks inhabit German South-west Africa and the Transvaal.

Andersson writes: "This Lark is not uncommon in Ondonga; before the breeding season they are seen in small flocks, but are less observable after they are paired. A pair which I watched occupied about eight days in constructing their nest and in the female laying her eggs, which I took on March 31st, after they had been incubated about three days. The nest is formed in a hole excavated to the depth of about two and a half inches, and thickly lined with decomposed grasses." He obtained a specimen at Ondonga in November, and several in Great Namaqualand in May and June; besides these there are in the British Museum two specimens from Potchefstroom and the neighbouring Magaliesberg range, the latter being one of the types from Wahlberg's collection, so that the most eastern range known for this species is about 29° E. long. All Mr. T. Ayres' specimens came from the Potchefstroom district, where he procured them in June and August; he writes: "During the month of August, 1881, these

Larks were much more plentiful than usual; on the open flats near Potchefstroom one put them up at almost every step."

I have come to the same conclusion as Dr. Sharpe did (P. Z. S., 1874, p. 631) that *C. conirostris* is subject to considerable seasonal change in the plumage, but this does not account for the different size and form of the bills, and I may cite as a very similar case, *Mirafra nævia* and *M. sabota*.

In my opinion two allied but distinct species have been referred to *Spizocoris conirostris* in the British Museum collection, and I cannot do better than name them after my two friends, the late Dr. A. C. Stark and Mr. W. L. Sclater, in acknowledgment of the services to science rendered by them in their joint work on the Avifauna of South Africa.

Calandrella starki, sp. nov. (Pl. 22, fig. 2.)

Alauda conirostris, Gurney in Anderss. B. Dam.-Ld. (note) p. 193 (1872) *Otjimbinque*.

Spizocorys conirostris, pt. Sharpe, Cat. Birds B. M. xiii. p. 564 (1890).

Adult. Very similar to the pale form of *C. conirostris*, but with a larger bill. Above mottled, sandy buff with brown centres to the feathers, the shaft-bands rather narrower and darker on the crown, which is somewhat crested; outer edge of the first primary buff; tail as in *C. conirostris*, outer feather creamy white, with a large dusky patch on the inner web reaching nearly to the end of the feather; penultimate feather with the outer web and end white, next feather with a partial narrow outer edge white; sides of head white, shading into pale brown on the ear-coverts and slightly mottled with brown on the cheeks; under parts white, faintly washed with sandy brown on the crop and flanks; a few brown spots and streaks on the crop and some faintly indicated streaks on the flanks; under surface of quills dusky with the inner edges and the under wing-coverts rufous tinted white. "Iris hazel; bill pale ashy with the culmen light brown; tarsi and feet pale flesh-colour" (T. Ayres). Total length 4·7 inches, culmen 0·45, wing 3·1, tail 1·9, tarsus 0·7. 24. 5. 64. Wilson's Fountain, Great Namaqua (Andersson).

Stark's Short-toed Lark inhabits Damara and Great Namaqualands, and the Transvaal.

The present species has been previously confounded with *C. conirostris*, owing to its size, the sandy shade of the upper parts and the colouring of the tail being very similar to the winter plumage of that bird; but it may be safely distinguished by its larger bill, which has no pink or red shade, the broad lengthened feathers of the crown and the under tail-coverts and most of the breast being pure white.

This species is known to me not only by the type described, but by two others in the British Museum, labelled "♂, 20. 6. 66. Otjimbinque (Andersson)" and "♂, 14. 11. 77. Potchefstroom (T. Ayres)."

Calandrella sclateri, sp. nov. (Pl. 22, fig. 3.)

Spizocorys conirostris (nec Sundev.) Sharpe, Cat. B. M. xiii. p. 565 (1890) pt. spec. *c. e.*

Adult. Differs from *C. conirostris* and *C. starki* in having the bill much longer and more wedge-shaped, and decidedly not Finch-like in form; the white on the tail is confined to the outer webs only of the three outer pairs of feathers; no trace of a crest; upper parts of a more earthy brown shade; throat white; breast tawny buff with the centre of the abdomen and the under tail-coverts whitish buff; crop faintly marked with dark brown spots, and the flanks slightly streaked with that colour. Apparently the bill is horn colour and the tarsi and feet pale brown. Total length 4·5 inches, culmen 0·55, wing 3·3, tail 1·7, tarsus 0·6. ♂, 6. 6. 62. Hountop R. in Great Namaqua (Andersson).

Young. Very similar in colouring to the adult, but with white spots on the upper parts, and the white on the outer tail feather just extending on to the base of the inner web; bill slightly shorter and the culmen straight. ♂, 27. 5. 62. Hountop R. (Andersson).

Sclater's Short-toed Lark is a native of Great Namaqualand.

This appears to me to be an extremely well-marked species, so readily distinguished — not only by the very peculiar form of the bill, but also by the white pattern of the tail, which is very different to that of *C. conirostris* and

C. starki, with which it has up to the present time been associated. It is known to me only by the two specimens I have described.

Callandrella razæ.

Spizocorys razæ, Alexander, Ibis, 1898, pp. 107, 282, pl. 3, *Raza Is.*; Bocage Jorn. Lisboa, 1898, p. 146; Fea. Boll. Soc. Geog. Ital. (3) xii. pp. 309, 310 (1899); Salvad. Ann. Mus. Genov. 1899, p. 295.

Adult male (type.) Above mottled, pale ashy brown with broad dusky black centres to the feathers; wings slightly browner than the back with the outer web of the first primary white; outer tail-feather white, with a rather small dusky wedge-shaped patch on the inner web; penultimate tail-feather with the entire outer web white; sides of head mottled white and dusky ash; sides of neck white; throat and under surface of the body white with sharply marked blackish shaft-stripes on the crop and less distinct stripes on the flanks; crop, flanks and thighs slightly tinted with brown; under wing-coverts ashy white; under surface of the quills dusky ash, with indistinct, partial, narrow buff inner edges. "Iris dark hazel; bill blackish horn, whitish towards the base of the lower mandible; tarsi and feet brownish flesh-colour; claws blackish horn." Total length 5·9 inches, culmen 0·55, wing 3·25, tail 2·0, tarsus 0·85.

Adult female (type). Exactly like the male in plumage. Total length 5·0 inches, culmen 0·5, wing 3·0, tail 1·7, tarsus 0·8. ♂, ♀, 28. 4. 97. Raza Is. (Boyd Alexander).

The Raza Island Short-toed Lark is confined, apparently, to the small desert island of Raza, one of the Cape Verde Group, in about 16° 40′ N. lat. 24° 40′ E. long.

This island, on which Captain Boyd Alexander discovered this Lark, has an area of about three square miles and is one of the Desertas, having no fresh water, and no inhabitants. An interesting description of this island is given by Captain Alexander (Ibis, 1898, p. 105) and he further writes (*t. c.* p. 282): "On October 7th we approached Raza for the second time within the year, and we discovered the males of this very local species all busy in courting their mates. With wings drooping and scraping along the ground, a male

would approach and circumvent a female, and then rise above her head and pour out his song as he ascended vertically with a gentle beat of wings, and not in the spiral circles that characterise the impetuous singing flight of our Sky-Lark. The song, uttered both on the wing and when stationary, consists of the call-notes constantly repeated. In the early morning, when numbers of these Larks were singing overhead, it was not unusual to find some singing in chorus, and this tended to lessen the somewhat monotonous character of their songs. When on the ground a ventriloquial call-note was constantly uttered, becoming very persistent just towards dusk. The nest is placed in a small depression in the loose stony soil, either among a patch of grass or underneath a boulder or a small creeping plant common on the island. It is a frail structure of dry grass, and if any attempt be made to detach it from its surroundings it falls to pieces in the hand. Incubation lasts for a period of thirteen days, both sexes sharing in the task. The eggs, three in number, resemble both in colouration and dimensions those of the Wood-Lark (*Alauda arborea*), from which, if they were to be mixed up, there would be a great difficulty in picking them out again. As Sig. Fea has killed over thirty specimens on this one small island, I can only hope that the species may not become extinct."

Genus XV. ALAUDULA.

Very similar to *Calandrella*, but differing in the secondaries being much shorter, the ends falling short of the tip of the wing by about 0·75 inch, or by three-quarters of the length of the tarsus.

Type.

Alaudula, Horsf. and Moore, Cat. B. M. E. I. Co. iii. p. 471 (1856) . . . . . A. raytal.

Alaudula minor.

Calandritis minor, Cab. Mus. Hein. i. p. 123 (1850) *N.E. Afr.*
Alaudula minor, Sharpe, Cat. B. M. xiii. p. 588 (1890); Shelley, B. Afr. I. No. 193 (1896).

Adult. Above mottled sandy brown, with dark brown centres to the feathers; outer edge of the first long primary white; tail with the outer feather white, with a dusky wedge-shaped patch on the inner web; penultimate feather with the white confined to the outer web; eyebrow, feathers under the eye, and the ear-coverts sandy buff; a blackish mark in front of the eye, and a few dark shaft-stripes on the cheeks, ear-coverts, and sides of the throat, the white of the throat extending on to the sides of the neck to behind the ear-coverts; remainder of the sides of the neck like the back, and separated from the lower throat by a fairly well marked dusky band; lower half of the throat closely marked with elongated spots of dusky brown; flanks with more faintly marked streaks; under wing-coverts and inner margins of the quills rufous buff, with the remainder of the quills dusky. Iris dark brown; bill dull horn colour; tarsi and feet pale brown. Total length 5·3 and 4·9 inches, culmen 0·4, wing 3·5 and 3·2, tail 2·2 and 2·0, tarsus 0·8. ♂, ♀, 7. 4. 97. Central Tunis (J. F. S. Whitaker).

The lesser Short-toed Lark ranges from the Canary Islands eastward through Egypt and Nubia into Palestine and the countries bordering the Persian Gulf.

The type specimen came from North-east Africa, and Heuglin, in his work on the birds of that sub-region, records the species as a migrant in Arabia, Egypt and Nubia, where it occurs in small flocks near the deserts.

It is not improbable that the large flocks referred to *C. brachydactyla* by Brehm and Heuglin may have included some of the present species, as they have both much the same habits and distribution, excepting that *C. minor* apparently entirely replaces *C. brachydactyla* in the Canary Islands.

Genus XVI. OTOCORYS.

Bill moderate; nostrils hidden by stiff plumelets. Wing of only nine primaries, long and pointed; secondaries falling decidedly short of tip of wing by more than the length of the tarsus; first three primaries about

equal and the longest; tarsi and feet dusky slate colour. Adults have the head ornamented with a black horn-like tuft of feathers on each side, and the crop uniform black. In the single Ethiopian species the entire front half of both the head and neck are black.

Type.

Otocorys, Bp. Nuovi Ann. Sc. Nat. Bologna ii. p. 407 (1833). O. alpestris.

Otocorys berlepschi.

Otocorys berlepschi, Hartert, J. f. O. 1890, p. 103; id. Cat. B. Senckenb. Mus. p. 37 (1891); id. Ibis, 1892, p. 523, pl. 13, *Kaffraria;* Shelley, B. Afr. I. No. 183 (1896); Stark, Faun. S. Afr. B. i. p. 226 (1900).

Type. "Top and sides of the head, chin, throat, and upper breast black, with a faint purplish gloss; ear-coverts tipped with pale brown; occiput, hind neck, interscapular region, smaller upper wing-coverts and tail-coverts bright vinaceous cinnamon; outer and inner webs of all the quills brown, faintly margined and tipped with brownish grey; tail dark brown, centre pair and outer webs of lateral rectrices pale brown; lower parts pale vinaceous cinnamon, spotted with brown on the breast and whitish along the middle of the abdomen. Total length about 6·5 inches, wing 4·15, tail 2·8, culmen 0·16, tarsus 0·8. The bill is of the somewhat acute form of *Otocorys bilopha*" (Hartert).

The Black-masked Shore-Lark has been recorded from South Africa only. All that I can find regarding this species is that the type is a mounted specimen in the Senckenberg Museum at Frankfurt, and that on a slip of paper attached to the stand of the specimen are the words "Alauda ? Caffraria." I cannot help doubting the accuracy of Kaffraria for the habitat of this Lark, for with the exception of this very remarkably coloured species, the genus *Otocorys* has never been recorded from south of the Tropic of Cancer.

Section III. FRINGILLÆ.

Bill stout and somewhat conical, in other words Finch-like; rictal bristles absent or obsolete. Wing of nine or ten primaries; secondaries never abnormally elongated, but falling short of tip of wing by about the length of the tarsus. Tail of twelve feathers. Tarsus scutellated in front and plain behind.

The section *Fringillæ* is represented in the Ethiopian Region by about 360 known species, a few of which are migratory; most are gregarious, and all are seed-eaters, generally, however, feeding their young upon insects and thus repairing the damage they do in the autumn months to the crops by clearing them of insects in the spring. They are mostly good songsters, are of a hardy disposition, and bear captivity well.

The natural position for this group in a list of African birds is, in my opinion, between the *Alaudidæ* and the *Oriolidæ*.

KEY TO THE FAMILIES.

a. Wing of nine primaries only; the first primary about the same length as the second . . . *Fringillidæ*.

b. Wing of ten primaries; the first a bastard-primary, not nearly so long as the second . *Ploceidæ*.

Family I. FRINGILLIDÆ.

Bill somewhat variable; nostrils pierced close to the forehead and near to the culmen. Wing of nine primaries, the first and second nearly equal in length. Tail nearly square. Tarsi, feet and claws moderate.

All the Ethiopian species have the wing and tail about equal in length; the nostrils hidden by small bristly plumes excepting in *Petronia;* nest cup-shaped excepting in *Passer* and *Petronia*.

According to Dr. Bowdler Sharpe's estimate, in the "Catalogue of Birds," this family comprises 502 species; but only 79 have been recorded from Tropical and South Africa, and none are indigenous to the Madagascar subregion.

KEY TO THE SUBFAMILIES.

a. Cutting-edges of the mandibles not coterminous, leaving a gap in the outline of the closed bill; mandibular angle at chin very acute . . . . . *Emberizinæ*.

b. Cutting-edges of the mandibles coterminous or nearly so; mandibular angle at chin very slightly indicated . . . . . *Fringillinæ*.

Subfamily I. EMBERIZINÆ.

The Buntings, which constitute this subfamily, may be easily recognised by the form of the bill. They usually place their cup-shaped nests on or near the ground, and their eggs are generally characterised by some hair-like streaks.

This subfamily is only represented in the Ethiopian Region by two genera comprising 15 species, a small proportion of the 224 species referred to this group in the "Catalogue of Birds."

KEY TO THE GENERA.

a. Tail with a white pattern on the outer feathers *Emberiza*.
b. Tail without any white pattern. . . . . *Fringillaria*.

Genus I. EMBERIZA.

The genus is found in Africa, Europe and Asia, and out of the two dozen species known, seven occur on the African continent, of which two, *E. hortulana* and *E. cæsia*, leave that country in summer.

	Type.
Emberiza, Briss. Orn. iii. p. 257 (1760)	E. cirinella.
Glycispina, Cab. Mus. Hein. Th. i. p. 128 (1850) . . .	E. hortulana.
Polymitra, Cab. *t. c.* p. 129	E. flaviventris.

KEY TO THE SPECIES.

a. Some bright yellow on the chest; under tail-coverts white.
  a^1. Back more uniform; mantle cinnamon.
    a^2. Some white on the wing-coverts.
      a^3. No dark streaks on the mantle . . . *flaviventris, ad.*
      b^3. Some dark streaks on the mantle . . *flaviventris, juv.*
    b^2. No white on the wing-coverts . . . . *affinis.*
  b^1. Back strongly mottled.
    c^2. Sides of the breast white . . . . . *polioplcura.*
    d^2. Sides of the breast yellow or ashy grey.
      c^3. Pale portion of crown grey; upper half of throat white . . . . . *cabanisi.*
      d^3. Pale portion of crown white; less white on the throat . . . . . *major.*

b. No bright yellow on the chest; under tail-coverts buff or tawny.
  c^1. No streaks on the under parts.
    c^2. Upper throat yellow; crop and most of head olive . . . . . *hortulana, ad.*
    f^2. Upper throat pale rufous; crop and most of head grey . . . . . *cæsia, ad.*
  d^1. Throat streaked . . . . . *hortulana, juv., cæsia, juv.*

Emberiza flaviventris.

Passerina flaviventris, Vieill. Enc. Méth. iii. p. 929 (1823) *Cape.*

Emberiza flaviventris, Böhm, J. f. O. 1883, p. 202 *Kakoma;* Reichen. J. f. O. 1887, p. 73 *Soboro;* Sharpe, Cat. B. M. xii. p. 499 (1888) *Congo, S. Afr. Abyssinia;* Shelley, P. Z. S. 1889, p. 367 *Useri R.*; Reichen. J. f. O. 1889, p. 284 *Usegua, Rufu R.;* 1891, p. 159 *Mpapwa, Tabora;* Sharpe, Ibis, 1891, p. 259 *Kamassia;* Reichen. J. f. O. 1892, p. 50 *Uganda;* Shelley, Ibis, 1893, p. 27; 1894, p. 23 *Zomba;* Reichen. Vög. D. O. Afr. p. 194 (1894); Fleck, J. f. O. 1894, p. 409 *Damaraland;* Shelley, B. Afr. I. No. 235 (1896); Rendall, Ibis, 1896, p. 174 *Transvaal;* Sharpe, Ibis, 1897, p. 514 *Zululand;* Alexander, Ibis, 1899, p. 564 *Zambesi;* Jackson, *t. c.* p. 623 *Ravine;* Nehrkorn, Kat. Eiers. p. 112 (1899) *egg;* Stark, Faun. S. Afr. B. i. p. 184 (1900); Marshall, Ibis, 1900, p. 239 *Mashona;* Neum. J. f. O. 1900, p. 287 *Massai, Ulu;* Ivy, Ibis, 1901, p. 19 *nest.*

Fringillaria flaviventris, Ayres, Ibis, 1880, p. 105 *Transvaal;* Dubois, Bull. Mus. R. Belg. 1886, p. 149 *Tanganyika;* Buttik. Notes Leyd. Mus. 1889, p. 75 *Cunene R.;* Emin, J. f. O. 1891, p. 60 *Ugogo;* Hartl. Abhandl. nat. ver Brem. 1891, p. 25 *Usambiro.*

Polymitra flaviventris, Reichen. J. f. O. 1887, p. 309 *Kibondo.*

Emberiza xanthogaster, Steph. Gen. Zool. xiv. p. 18 (1826) *S. Afr.*; Hartert, Kat. Vogels, Senck. Mus. p. 51 (1891; nom. emend. pro *E. flavigasta*, Rüpp.).

Emberiza flavigaster, Rüpp. Cretzschm in Rüpp. Atlas, p. 38, pl. 25 (1826) *Kordofan;* Reichen. J. f. O. 1887, p. 73 *Soboro;* 1889, p. 284 *Usegua;* Hartert, Kat. Vög. Mus. Senck. p. 51 (1891) *Kordofan;* Shelley, B. Afr. I. No. 237 (1896); Witherby, Ibis, 1891, p. 246 *Kawa.*

Polymitra flavigastra, Cab. J. f. O. 1878, p. 228 *Ndi;* Fisch, J. f. O. 1885, p. 136 *Usaramo, Pangani, Maurui, Arusha, Ngaruka, Naiwasha, Wapokomo, Barawa.*

Adult male. Sides and upper part of head black, with five white longitudinal bands, one down the centre of the crown to the neck, and two

on each side of the head, above and below the eye and ear-coverts; sides and back of neck greyish ash, inclining to white on the sides near the black ear-coverts; upper back and scapulars deep cinnamon, with or without buff edges to the feathers; middle and lower back and upper tail-coverts pale ashy grey. Wing blackish brown with the least coverts grey; median coverts white; greater coverts and quills with pale brownish buff edges, broadest on the inner secondaries and greater coverts, the latter with rather broad white ends; wing-lining dusky brown, with the axillaries and most of the coverts white. Tail blackish brown with a large white pattern on the three outer pairs of feathers and a small white spot at the end of the inner web of the next; shafts entirely black; the white pattern increasing in size towards the outer feather, where it extends over nearly half of the inner web and the whole of the outer one, with the exception of a wedge-shaped blackish patch near the end. Chin, abdomen and under tail-coverts white; throat and centre of breast yellow, with the crop and front of the chest shaded with rufous, and the sides of the body isabelline. "Iris brown; upper mandible dark brown; lower mandible and legs flesh colour." Total length 5·7 inches, culmen 0·45, wing 3·2, tail 2·7, tarsus 0·7. ♂, 1. 9. 75. Pinetown (T. L. Ayres).

Female. Similar to the male but with the mantle more mottled, the dark portion of the head slightly browner and the pale band on the crown partially tinted with rufous. Total length 5.8 inches, wing 3·1, tail 2·8, tarsus 0·7. ♀. Transvaal (T. Ayres).

The Common Golden-breasted Bunting ranges over southern and tropical Africa generally, northward to the Congo and Abyssinia.

E. flaviventris has been met with in West Africa as far north as Leopoldsville on the Congo, where Bohndorff procured a specimen which is in the British Museum. He also obtained the species at Kibondo to the west of Lake Tanganyika, and it is probably in this latter district that Captain Storms met with it. Professor Barboza du Bocage observes: "This species is plentiful from Benguela to the Cunene River, but apparently keeps to the high plateau land of the interior. The native names, according to Anchieta, are 'Kianja' at Biballa, 'Bendabalamba' at Caconda, and 'Sapauzola' in the Humbe district. Andersson found the species fairly common in northern Damaraland, frequenting well-wooded localities and going to drink in the morning and evening. With respect to

its occurrence in Cape Colony, where the type was obtained, Dr. Sharpe writes: "Mr. W. Atmore procured this pretty species at Kykoe and Meiring's Poort, where he met with it 'in small flocks of four or five individuals,' probably family parties. Mr. Rickard tells us that he only once fell in with it at East London, and Captain Trevelyan records it as scarce near Kingwilliamstown. Mr. T. C. Atmore obtained it near Grahamstown and Eland's Post." According to Stark, these Buntings "are usually met with during autumn and winter in small flocks of ten or a dozen. They are extremely tame and fearless in their habits, like all the South African Buntings I have met with; feed much on the ground in open bush country, but are sometimes found in thickly wooded localities, and if disturbed only fly for a few yards before settling again on the ground. Only occasionally do they perch on low bushes or trees, much oftener on stones or rocks. They feed largely upon insects, especially upon small beetles, less frequently upon seeds. In spring the brilliant cocks sing their simple Bunting-like notes from the summit of low bushes or stones, a monotonous and oft-repeated 'zizi-zizi-zee,' with the stress on the last syllable. About the month of October the female proceeds to build her nest of dry grass-stalks, lined with finer grass and hair, in a low bush at the foot of a rock, or among the roots of herbage on a ledge, and towards the beginning of November lays four or five eggs. These are smaller than those of the Cape Bunting (*Fringillaria capensis*) and differ completely in colour. They are white, thickly marked all over with scrawls and hair-like zig-zag lines of very dark purplish brown or black. They measure 0·75 × 0·58."

From Grahamstown in Cape Colony Mr. R. H. Ivy writes: "I have never found the nest of this bird in a low bush or on the ground, though I have seen many hundreds of them. Those I have seen have usually been placed on the outer

branches of an acacia-tree, from 6 to 10 feet above the ground. The nest is cup-shaped, about $2\frac{1}{4}$ inches across, and is composed of fine twigs and roots, and lined with finer material of the same description. The eggs, four or five in number, are never merely spotted, but are scrolled round the obtuse end with purplish brown on a white ground."

In Natal I shot a specimen at Pinetown in the open country where the grass had been recently burnt, and Colonel Savile Reid, while at Ladysmith in August, found a good number frequenting the bush at the base of the hills. In Zululand, the Messrs. Woodward collected four specimens at Eschowe. Mr. T. E. Buckley writes: "Met with sparingly in the bush veldt north of Pretoria into the Bamangwato district; but not found in any great abundance. It seems to be rather solitary in its habits." He also procured specimens in Swaziland. In the Barberton district, according to Dr. Rendall, it is called by the colonial Dutch "Strep-kopji." This name, according to Stark, is applied to *Fringillaria capensis* in Cape Colony. Mr. T. Ayres records it as very common throughout the wooded parts of the Magaliesbergen and plentiful in some parts adjoining the Limpopo. Mr. Guy Marshall found it by no means uncommon in Mashonaland, and the late Mr. Frank Oates collected specimens at many places during his journey from the Limpopo to the Victoria falls of the Zambesi. In the British Museum is a specimen from Tete on the Zambesi. Further up the latter river Captain Boyd Alexander procured a specimen between Chicowa and Zumbo, and writes: "Inhabits high ground, and especially where the wood is composed of *Capaiferæ mopane*." This Bunting is distributed very generally throughout the Lake district of Central Africa and Eastern Africa to about 17° N. lat., but is apparently outnumbered in Nyassaland by *E. major*, and is replaced

in Somaliland by *E. poliopleura*. There is a fair series from Zomba in the British Museum. In German East Africa specimens have been collected by Böhm at Kakoma and Simbaveni, where he found a nest on April 23, containing two eggs; these were greyish white with a zone of sepia brown streaks and freckles: native name "Kassongur." Emin met with it in Ugogo, and Fischer's collections contain specimens from many places, including the Pangani river, Wapokomoland, and Barawa on the south Somali coast.

In British East Africa Mr. Hunter procured a specimen at the Useri river, Fischer records it from Naiwasha lake, Mr. Jackson found it at the Eldoma ravine and at Kamassia, and on August 23, 1896, he discovered its nest in a thorn bush, three feet from the ground. It was "made of grass, lined with fine fibrous roots. Eggs two, white, with circle of black bunting marks at basal end." In Uganda Dr. Stuhlmann obtained a specimen at Manjonjo.

The type of *E. flavigaster* was procured by Rüppell in Kordofan, where he found the species, during the winter months, frequenting the low scrub. According to Heuglin these Buntings arrive, during the early summer, in Bogos, Abyssinia and Kordofan, and breed there in November and December, and are generally to be seen singly or in pairs, perched on the scattered trees and roosting near water. He questions whether the immense flocks seen by Hartmann in S. Sennaar about the middle of June, were rightly identified as the present species. In the British Museum there are specimens collected by Mr. Jesse at Senafé in Abyssinia, in May, and at Rairo in Bogosland, in August, and Dr. Blanford found the species to be rare in the Anseba valley; he met with it also in Hababb at about 3,000 feet above the sea level. Antinori procured specimens on the Anseba in May and June, and at Sciotel in July they were breeding, and

he considered it to be a resident species. Mr. Witherby during his expedition up the White Nile obtained a specimen at Kawa, the only one he saw.

He suggests that *E. flavigastra*, Rüpp., can be separated from *E. flaviventris*. From an examination of the specimens in the British Museum, I have come to the opposite conclusion, and I cannot imagine where he would draw the boundary line between the ranges and the characters of the two races.

Emberiza affinis.

"Emberiza affinis, Würt." Heugl. J. f. O. 1867, p. 297; Finsch and Hartl. Vög. O. Afr. p. 460 (1870) *Sennaar;* Shelley, B. Afr. I. No. 238 (1896); Alexander, Ibis, 1902, p. 295 *Gambaga.*

Fringillaria affinis, Salvad. Ann. Mus. Genov. 1888, pp. 270, 271 *Gazelle R.*

Fringillaria forbesi, Hartl. J. f. O. 1882, p. 324 *Upper White Nile;* Shelley, P. Z. S. 1888, p. 37 *Kuterma.*

Emberiza forbesi, Sharpe, Cat. B. M. xii. p. 502 (1888); Hartert, Nov. Zool. 1899, p. 414 *Gambaga.*

Fringillaria capensis (nec Linn.) Swains B. W. Afr. i. p. 211, pl. 18 (1837) *Senegal.*

Adult male. Exactly like *E. flaviventris* in the colouring of the head, neck and mantle; but differing in the lower back being washed with the same shade of rufous as the mantle; and in the entire absence of white on the wing-coverts, which, like the quills, are dark brown, with paler brown edges; under surface of body yellow with only the under tail-coverts white. "Iris brown; bill blackish, paler beneath; legs greyish horn colour." Total length 5·3 inches, culmen 0·4, wing 2·75, tail 2·4, tarsus 0·7. ♂, 26, 5. 83. Kuterma (Emin).

Swainson's Golden-breasted Bunting inhabits Senegambia, the White Nile and Sennaar.

Swainson first recorded and figured this species from a Senegambian example; but believing it to be a female of a previously described S. African Bunting he called it *Fringillaria capensis.* Specimens have also been collected in this country at Casamanse and Bissao. Inland from the Gold Coast Captain Gifford procured a specimen at Gambaga, July 20,

1. Emberiza poliopleura.
2. Fringillaria impetuani.

1898, and Capt. Boyd Alexander met with the species at the same place, February 2, 1901.

In the Upper White Nile district Emin obtained the type of *Fringillaria forbesi* at Langomeri (3° 30′ N. lat. 31° 5′ E. long.) and one of his specimens is now in the British Museum, from Kuterma. Antinori also met with the species near the Gazelle river.

Heuglin described the type of *Emberiza affinis*, from Sennaar, in the collection of Prince Paul of Württemburg, as distinguished from its allies by the absence of white on the wing-coverts.

Emberiza poliopleura. (Pl. 23, fig. i.)

Fringillaria poliopleura, Salvad. Ann. Mus. Genov. 1888, pp. 269, 537 *Shoa*.

Emberiza poliopleura, Sharpe, P. Z. S. 1895, p. 471 *Somali;* Shelley, B. Afr. I. No. 236 (1896); Elliot, Field Columb. Mus. Orn. i. No. 2, p. 36 (1897) *Somali;* Hawker, Ibis, 1899, p. 64 *Somali;* Grant, Ibis, 1900, p. 136 *Somali, S. Abyssinia;* Sharpe, P. Z. S. 1901, p. 302 *Somali;* Grant & Reid, Ibis, 1901, p. 626 *S. Abyssinia*.

Adults. Exactly like *E. flaviventris* in the colouring of the entire head and neck; but differs in the back and lesser wing-coverts being much more mottled, these feathers having broad edges of rufous buff or ashy white and having also some partially hidden black centres; white pattern of tail almost confined to the terminal quarter but extending on to the ends of the five outer pairs of feathers; sides of body mostly white, the flanks grey, often with blackish streaks or spots. "Iris brown; bill pale brown, darker on the culmen; legs flesh colour." Total length 5·7 inches, culmen 0·45, wing 3·0, tail 2·6, tarsus 0·65. ♂, 16. 1. 99. Hawash (Lord Lovat).

The Somali Golden-breasted Bunting inhabits Somaliland, Shoa, and Southern Abyssinia.

In Somaliland Mr. Elliot found it not uncommon, especially about Hillier. There are, in the British Museum, specimens collected by Mr. Hawker at Godgat, Daboloc and Jifa Medir. Lord Lovat also shot specimens at Acabsiyo in Somali, and a month later at Hawash in Southern Abyssinia, January 16,

1899, at no great distance from Soddé in Shoa, where Dr. Ragazzi discovered the type in August, 1886: he considered it to be a rare bird in that district, though he afterwards found the species to be abundant at Gherba, where he collected five specimens in July, 1887. In Southern Abyssinia, according to Mr. Pease, it conceals itself in the lower parts of thick bushes.

Emberiza cabanisi.

Polymitra (Fringillaria) cabanisi, Reichen. J. f. O. 1875, p. 233, pl. 2, figs. 2, 3 *Camaroons*.

Emberiza cabanisi, Sharpe, Cat. B. M. xii. p. 503 (1888) *Tingasi;* Reichen. J. f. O. 1891, p. 390; 1897, p. 42 *Togo;* Shelley, B. Afr. I. No. 241 (1896); Hartert, Nov. Zool. 1899, p. 414 *Gambaga;* Alexander, Ibis, 1902, p. 295 *Gambaga*.

Fringillaria cabanisi, Reichen. J. f. O. 1890, p. 124 *Camaroons;* Hartl. Abhandl. nat. ver. Brem. 1891, p. 25 *Njangabo*.

Fringillaria orientalis (nec Shelley) Shelley, P. Z. S. 1888, p. 37 *Tingasi*.

Adult male. Upper parts dusky-grey with blackish centres to the feathers of the crown and mantle; forehead and crown shading into black on the sides leaving an ill-defined grey central band; lower back and upper tail-coverts more uniform. Wing dusky black, with paler greyish edges to the feathers and broad white ends to many of the outer, median, and greater coverts, forming two partial bands on the wing; inner lining of wing dusky ash, inclining to white on the inner edges of the quills; under coverts strongly mottled with white. Tail dusky black, with white ends to the four outer pairs of feathers, the white extending over half of the outer feather and confined to terminal spots on the next three pairs. Sides of head black, with a white eyebrow; chin and upper half of throat white, which extends onto the sides of the upper neck behind the ear-coverts; remainder of sides of neck grey; lower throat and breast bright yellow; under tail-coverts white, with the base of the feathers dusky. Iris brown; bill with the upper mandible black and the lower one yellowish white; tarsi and feet brown. Total length 6·5 inches, culmen 0·5, wing 3·4, tail 3, tarsus 0·75. ♀, 1. 1. 1. Gambaga (Alexander).

Cabanis' Golden-breasted Bunting ranges over Western and Central Africa from about 10° N. lat. to 1° S. lat.

The most northern and western range yet known for this

species is Gambaga, which is about 300 miles due north of Cape Coast Castle. Here Captain W. Giffard procured specimens in January, July and August. Captain Boyd Alexander has also met with the species at the same locality.

In the German territory of Togoland four specimens have been collected by Dr. Büttner and Mr. Ernst Baumann, so that apparently this Bunting is not rare in the country to the east of the Volta river, the waters of which, at present, form the western boundary of its known range.

Although the species has not yet been recorded from the Niger district, we are informed by Dr. Reichenew, who first described it from a Camaroons specimen, that it is common in the lowlands of the latter country and much resembles, in song and habits, our European Yellow-Hammer. The species ranges into Equatorial Africa, for Emin procured an immature female at Tingasi, and according to Hartlaub he also met with it at Njangabo to the west of the Victoria Nyanza.

Emberiza major.

Polymitra (Fringillaria) major, Cab. J. f. O. 1880, p. 349, pl. 2, fig. 2 *Angola.*

Emberiza major, Sharpe, Cat. B. M. xii. p. 502 (1888); Shelley, B. Afr. I. No. 239 (1896); id. Ibis, 1901, p. 586 *Angoniland.*

Fringillaria major, Reichen. J. f. O. 1887, pp. 301, 305 *Congo;* Sousa, Jorn. Lisb. 1889, p. 49 *Quindumbo;* Reichen. J. f. O. 1890, p. 76; Emin, J. f. O. 1891, p. 60 *Ugogo.*

Fringillaria orientalis, Shelley, P. Z. S. 1882, p. 308 *Mamboio.*

Emberiza orientalis, Sharpe, Cat. B. M. xii. p. 502 (1888) *Congo;* Reichen. J. f. O. 1889, p. 284 *Usambara;* Shelley, Ibis, 1893, p. 27; 1894, pp. 23, 473 *Zomba, Fort Lister;* Reichen. Vög. D. O. Afr. p. 195 (1894); Shelley, B. Afr. I. No. 240 (1896); id. Ibis, 1897, p. 527 *Nyika, Fort Hill;* 1898, pp. 379, 553 *Chiradzulu;* 1899, p. 367 *Ikawa;* Marshall, Ibis, 1900, p. 239 *Mashona.*

Emberiza major orientalis, Stark, Faun. S. Afr. B. i. p. 186 (1900).

Fringillaria cabanisi (nec Reichen.) Sousa, Jorn. Lisb. 1887, p. 47 *Cape Delgada.*

Adult male. Sides and upper part of head jet black, intersected by three white bands, one down the centre of the crown and the others as elongated eyebrows; sides, back of neck and back ashy grey, inclining to white next to the black ear-coverts, and strongly mottled with black centres to the feathers of the hind neck and mantle. Wings blackish brown, the least coverts partially edged with grey; median coverts white; greater coverts and quills with pale ashy edges, broadest on the inner secondaries and greater coverts, the latter with rather broad white ends; wing-lining dusky brown with the axillaries and most of the coverts white. Tail blackish brown with a large white pattern on the three outer pairs of feathers and a large white spot at the end of the inner web of the next; shafts generally entirely black; the white pattern increasing rapidly towards the outermost feather where it extends over quite half of the inner web, and the whole of the outer one, with the exception of a wedge-shaped blackish patch near the end. Under parts uniform bright yellow, with the chin, portion of upper throat, sides of throat and the under tail-coverts, white; thighs ashy white; flanks washed with grey. "Iris brown, upper mandible and end of lower one blackish, remainder of lower mandible flesh-colour" (Marshall). Total length 6·5 inches, culmen 0·5, wing 3·4, tail 2·9, tarsus 0·75. ♂, Aug. Zomba (A. Whyte).

Female. Differs in the dark portion of the head being rufous shaded brown; crown obscurely mottled with dark centres to the feathers and the central pale band only partially developed; pale edges to the feathers of the mantle and inner portion of wings, rufous shaded brown. Total length 6·4 inches, culmen 0·45, wing 3·2, tail 2·9, tarsus 0·75. ♀, 6. 97. Chiradzulu (A. Whyte).

Immature. Differs in the crown having no trace of the pale central band, this being brown like the mantle with blackish centres to the feathers; lower back of the same colour but with less defined dark centres; median wing-coverts with broad buff ends and with rufous buff terminal margins to the greater coverts. Zomba (A. Whyte).

With a series of twenty-five specimens from Zomba and the surrounding district before me, it is evident that the dark portion of the head varies from jet black, in full plumaged males, to brown in females and young birds. The variation in the amount of the pale central band on the crown depends both on sex and age, and is entirely absent in full grown young birds. The amount of white on the wing-coverts also depends solely upon age; in full grown young birds the white on the wing is entirely absent and in these the upper parts are much more rufous, and the wings measure from 2·8 to 3·4 inches.

There can, I think, be no doubt that *Fringillaria orientalis*, and *F. major*, are identical.

The Greater Golden-breasted Bunting ranges over Southern Tropical Africa between about 4° and 18° S. lat.

The most northern known range for this species in West Africa is the Lower Congo river, where specimens have been collected by Bohndorff at Manyanga and Leopoldsville. A little further south, in the Talla Magungo district of Angola, Schütt procured the type of the species. In Benguela, Anchieta records the species as abundant at Quindumbe and known to the natives there as the "Bindabalamba." He also met with it at Caconda, but I cannot trace its range any further south in Western Africa.

The only specimen yet received to the south of the Zambesi, is a male procured in September on the Hanyani river (4,500 feet) by Mr. Guy Marshall, who considers these birds to be scarce in Mashonaland, as he has seen the species on only one other occasion, when he met with a flock of about a dozen in May. He writes: "It appears to seek its food entirely on the ground, in open bush, and is somewhat fearless in its habits, allowing one to approach within a few yards before rising, when it only flew for a short distance, settling again abruptly at the base of a small tree or bush; they seem to perch rarely, and then only on low shrubs."

To the north of the Zambesi these Buntings are very abundant and generally distributed over British Central Africa, as specimens have been received in seven separate collections from that country. On the Mozambique coast the species has been obtained by Sir Augusto Cardosa at Cape Delgado. Along the coast of German East Africa Sir John Kirk procured for me the type of *Fringillaria orientalis* at Mamboio, and Dr. Stuhlmann has met with the species as far north as the Usambara country on the left bank of the Pangani river. In the interior Emin has collected specimens in Ugogo.

Emberiza hortulana.

Emberiza hortulana, Linn. S. N. I. p. 309 (1766); Sharpe, Cat. B. M. xii. p. 530 (1888); Gigl. Ann. Mus. Genev. 1888, p. 34; Salvad. t. c. p. 268 *Shoa;* Hartert, Kat. Vög. Mus. Senck. p. 51 (1891) *Semien;* Shelley, B. Afr. I. No. 242 (1896); Grant, Ibis, 1900, p. 136, *Balti;* id. and Reid, 1901, p. 626, *S. Abyssinia.*

Adult male. Head, neck and crop uniform pale ashy olive, with the fore part of the sides of the head, chin, middle throat and a band beneath the ear-coverts pale yellow; back pale rufous-tinted-brown, the mantle only with broad blackish shaft-stripes. Wings brown, slightly greyer on the least and median coverts; ends of the greater coverts and the inner secondaries with broad tawny-buff edges; remainder of the quills and the primary-coverts with very narrow buff margins; wing-lining brown, with narrow whitish inner edges to the quills and the coverts mostly white, partially tinted with yellow. Tail brown with tawny buff edges much broader on the centre feathers; the two outer pairs of feathers with rather more than the terminal third of their inner webs white. Chest, abdomen and under tail-coverts rufous-buff, with the thighs yellowish. Iris brown; bill and legs flesh colour. Total length 6·2 inches, culmen 0·45, wing 3·6, tail 2·9, tarsus 0·75. ♂, 23. 1. 99. Balti (Lord Lovat).

Female. Differs only in having the crown and crop streaked.

The Ortolan ranges over the greater part of Europe eastwards into Afghanistan. In winter it visits Abyssinia.

I have examined specimens shot by Mr. A. E. Pease in Southern Abyssinia, at the Akaki river, Mount Sequala and Roquecha in December and February. Lord Lovat writes: "The Ortolan inhabits the high plateau of Central Abyssinia, where a few trees are to be found." In Shoa Dr. Ragazzi found them frequently in February, 1885, in the mornings and evenings, near water. According to Heuglin, they are abundant in Abyssinia from September till April, when they migrate northward down the Nile; but possibly a few pairs are left behind to breed. They frequent mostly the highland pasture country up to 10,000 feet, where they are to be met with singly or in pairs on the scattered bushes; he never observed them to congregate in flocks.

Emberiza cæsia.

Emberiza cæsia, Cretzschm. in Rüpp. Atlas, p. 17, pl. 10, fig. b. (1826) *Abyssinia;* Sharpe, Cat. Birds, B. M. xii. p. 535 (1888); Hartert, Kat. Vög. Mus. Senck. p. 51 (1891) *Sennaar;* Shelley, B. Afr. I. No. 243 (1896); Cholmley, Ibis, 1897, p. 206, *Erba Mt.;* Rothschild and Wollaston, Ibis, 1902, p. 9 *Shendi.*

Adult male. Head, neck and crop uniform bluish grey with the fore part of the sides of the head, chin, middle throat, and a band beneath the ear-coverts very pale cinnamon; back, wings and tail as in *E. hortulana*, only with no trace of yellow on the under wing-coverts. Chest, abdomen, thighs and under tail-coverts pale cinnamon, generally slightly darker than the centre of the throat. Iris brown; bill pale reddish brown; legs brownish flesh colour. Total length 6·0 inches, culmen 0·45, wing 3·2, tail 2·6, tarsus 0·7. Abyssinia (Shelley, Coll.).

Adult female. Differs from the male in the grey of the head and neck being duller and browner and there being dark streaks on the crown, back of neck and crop. Total length 5·8 inches, culmen 0·4, wing 3·0, tail 2·6, tarsus 0·7. ♀, Mt. Carmel (Tristram).

Cretzschmar's Ortolan ranges from Abyssinia into Europe and Arabia. Rüppell, who discovered the species, procured a specimen in Sennaar and met with it in the Abyssinian highlands and on Kurgos island in 17° N. lat. I am not aware of the species having been found further south than the Blue Nile, where Brehm records it as very common in November. Heuglin informs us that they arrive in Abyssinia and Arabia, generally in flocks, at the beginning of September and breed occasionally near Cairo.

Genus II. FRINGILLARIA.

The members of this genus closely resemble those of *Emberiza*, and may be best distinguished by their having no white ends to the tail-feathers, the absence of yellow on the plumage being also characteristic, as this colour is generally strongly pronounced in Ethiopian members of the genus *Emberiza*.

Fringillaria ranges through south and tropical Africa to India, and an aberrant member of the genus is an inhabitant of Japan. There are nine species, of which four are confined to the African continent, and one to the island of Socotra.

KEY TO THE SPECIES.

a. No white on lower back; crop not more rufous than the abdomen.	
a^1. No rufous on the under surface of wings.	
a^2. Under parts paler and more ashy; throat white.	
a^3. No dusky streaks on crop or flanks .	*capensis, ad.* 156
b^3. Some dusky streaks on crop or flanks .	*capensis, juv.*
b^2. Under parts darker and yellower; throat sandy yellow.	*reidi. n.sp.* 158
b^1. Some rufous on under surface of wings.	
c^2. No white or black on head or throat.	
c^3. South Africa	*impetuani, ad.* 157
d^3. Northern Africa	*striolata, juv.* 161
d^2. Head striped with black and white in adults.	
e^3. Crop black like the throat, with hoary white or pale brown edges to the feathers	*striolata, ad.* 161
f^3. Crop cinnamon, like the breast and under tail-coverts.	
a^4. More rufous on quills, this colour extending entirely across the inner web of the first primary	*septemstriata.* 162
b^4. Less rufous on quills; this colour (when present) never entirely crossing the inner web of the first primary.	*tahapisi.* 166
b. Some white on lower back; crop strongly washed with rufous; chin, upper throat, abdomen and under tail-coverts buffy white .	*socotrana.* 168

Fringillaria capensis.

Emberiza capensis, Linn. S. N. i. p. 310 (1766) *Cape.*

Fringillaria capensis, Sharpe, Cat. Birds B. M. xii. p. 565 (1888) pt. *Damara, Cape Town, Mossel Bay;* Shelley, B. Afr. I. No. 244 (1896); Nehrkorn, Kat. Eiers. p. 113 *egg;* Stark, Faun. S. Afr. B. i. p. 187 (1900).

Emberiza caffrariensis, Steph. Gen. Zool. xiv. p. 18 (1826) *S. Afr.*

Fringillaria vittata, Swains. An. in Menag. p. 315 (1837) *S. Afr.*

Adult male. Crown and mantle mottled, with blackish centres to the feathers; a band down the centre of the crown, edges of the other feathers of the crown and nearly the whole of the sides and back of neck ashy brown shading into rufous brown on the mantle; lower back, upper tail-coverts and tail uniform brown, the latter with narrow partial rufous buff edges to the feathers. Wings dark brown with the least and median coverts entirely cinnamon and having broad cinnamon edges to the greater coverts and inner secondaries, the latter gradually passing into narrow buff margins on the primaries; primary-coverts with very narrow partial buff edges; inner lining of wing dusky brown, with the under coverts buffy white and the inner edges of the quills washed with that colour. Sides of head and throat buffy white, with a broad black band through the eye and another black band from the gape passing under the cheeks, round the back of the ear-coverts and joining the other black band; breast and under tail-coverts buff with a dusky shade on the crop and sides of the body. Bill horn colour, greyish towards the base of lower mandible; iris dark brown, legs nearly black. Total length 6·1 inches, culmen 0·45, wing 3·1, tail 2·8, tarsus 0·8. ♂, 24. 1. 74. Paarl (Shelley.)

The Cape Rock-Bunting ranges from Angola into Cape Colony, and is replaced by Reid's Rock-Bunting in South-Eastern Africa.

The species has been recorded by Hartlaub, in 1857, as forming part of Henderson's collection from Angola, and the specimen described would appear to be very similar to those from Cape Colony. One in the British Museum, obtained by Andersson on May 23, 1864, at the Tioge river, to the north of Lake Ngami, is remarkably pale in colour, and these are the only two specimens recorded from the western side of the Continent north of the Orange river.

In Cape Colony these Rock-Buntings are fairly abundant on Table mountain and in the surrounding country.

Stark writes: "The Cape Bunting is almost invariably met with in pairs on broken rocky ground, and in Western Cape Colony is a common species from the sea level to about 5,000 feet in the mountains. Even on the barren sandy coast of Little Namaqualand it is to be found wherever there is the slightest outcrop of rock. The 'Steep Kopje' is an extremely

tame little bird and allows a very close approach as it sits, piping its simple song of 'zizi-zizi-zi' and opening and shutting its wings, on the top of a rock. It feeds on insects, small beetles, grasshoppers and spiders, as well as on the seeds of various grasses and weeds. The nest, rather deeply cup-shaped, is flimsily constructed of dry grass and rootlets, scantily lined with hair, and is usually placed in a low bush close to the ground, or by the side of a rock. The three or four eggs, laid in September or October in the Colony, are pale greenish white, thickly spotted and blotched with reddish brown and yellow, frequently in a cap over the larger end. They average 0·80 × 0·62."

There is a good series of specimens in the British Museum, those collected in Cape Colony from January to July all have the light parts whitish buff, while those collected in Natal and the Transvaal from February to November have the pale parts sandy yellow, and these latter ones belong, I consider, to a well-marked Eastern form which I name *F. reidi*, after my friend Colonel Savile G. Reid, whose notes on the birds of Natal, published in the *Zoologist* for 1882, must have interested everyone who has read them.

Fringillaria reidi, sp. nov.

Fringillaria vittata (nec Swains.) Ayres, Ibis, 1878, p. 297 *Potchefstroom*.
Fringillaria capensis (nec Linn.) Butler, Feilden and Reid, Zool. 1882, p. 302 *Natal;* Ayres, Ibis, 1884, p. 230 *Transvaal;* Sharpe, Cat. B. M. xii. p. 565 (1888) pt. *Rustenburg*.

Adults. Very like *F. capensis*, but differing in the pale parts of the sides of the head, the throat, centre of breast and the under tail-coverts being darker and of a sandy yellow colour. Iris dark hazel, bill dusky, under mandible paleish towards the gape; tarsi and feet dusky, soles of feet pale. Total length 6·0 inches, culmen 0·4, wing 3·0 to 3·15, tail 2·7, tarsus 0·8. ♂, 14. 7. 81; ♀, 25. 7. 81. Ingagani R. (Reid).

Reid's Rock-Bunting inhabits Natal, Zululand and the Transvaal. This species is the eastern representative of *F. capensis* and is as nearly allied to that species as *F. tahapisi* is to *F. septemstriata*. It is represented in the British Museum by four specimens from Natal, collected in July, October and November by Colonel Savile Reid and Colonel E. A. Butler, who found the species not uncommon in the Newcastle district. From the Transvaal, there are two specimens obtained by Mr. W. Lucas at Rustenburg in June and July, and two by Mr. T. Ayres at Potchefstroom, dated February and October. The latter observer says that the species is by no means plentiful in the Transvaal, where it frequents the rocky ranges.

Fringillaria impetuani. (Pl. 23, fig. 2.)

Emberiza impetuani, Smith, Rep. S. Afr. Exped. App. p. 48 (1836) *Little Namaqua.*

Fringillaria impetuani, Sharpe, Cat. B. M. xii. p. 563 (1881) *Damara, Cape Col. Transvaal;* Shelley B. Afr. I. No. 245 (1896); Stark, Faun. S. Afr. B. iii., p. 190 (1900).

Adult. General plumage sandy brown, fading into buff on the front half of the sides of the head, throat, abdomen and under tail-coverts; upper parts mottled with fairly broad blackish shaft-stripes; wing-coverts with broader dark centres and more rufous-shaded wide edges; quills brown with rather broad pale cinnamon edges on the secondaries, which decrease into narrow buff edges towards the outermost primaries; under surface of quills brown, with rather broad inner margins and the under coverts rufous buff. Tail dark brown with a variable amount of rufous buff edges to the feathers, according to the season. Throat and front half of the sides of the head buff, shading into sandy brown on the hinder half of the eyebrows, ear-coverts and crop, and becoming paler again on the breast towards the under tail-coverts. "Iris and legs brown; bill light brown" (Bradshaw). Total length 4·6 and 5·0 inches, culmen 0·4 and 0·35, wing 2·9, tail 2·2, tarsus 0·75 and 0·7. ♂, ♀, 15. 11. 66. Tjanjombo (Andersson).

The Lark-like Rock Bunting ranges from Angola into Cape Colony and the Transvaal.

Hartlaub (Orn. W. Afr. p. 152) mentions this species as

having been obtained by Henderson in Angola; but the description he gives of the species is taken from an example in the Paris Museum. There is no reason why this Bunting should not range into Angola, for according to Andersson, the species is "Common in Damara and Great Namaqualand; but as it frequently resorts to the ground in search of seeds and insects, it often thus escapes observation; it is gregarious, and is partial to broken ground or its immediate vicinity, and also to the neighbourhood of water, which it appears to require pretty constantly." Layard remarks: "Common about Nel's Poort, flying in small flocks and feeding on small grass seeds and insects. It has a short lively song." The species is, according to Stark, somewhat locally distributed in Cape Colony, but generally common where found, as in the Karroo and on the Orange river. It is more abundant towards the north and north-east districts of the Colony." He further remarks: "The eggs described by Mr. Layard as of this bird appear to be those of some other species, as a clutch from a nest in the Karroo, on which I snared the hen, do not at all resemble his description either as regards size or colour. They are pale bluish white, rather heavily clouded and spotted with brownish yellow and red, and measure 0·72 × 0·60. The cup-shaped nest was built of dry grass in a hollow at the foot of a bush. The resemblance of this Bunting to a Lark is not only in colour, but extends to some of its habits, for it runs and crouches on the ground just like one of the latter birds."

Sir Andrew Smith, when he first described this species, wrote: "Inhabits the country between Ru Gariep and Tropic. Some years ago I found specimens of this species inhabiting the arid districts of Little Namaqualand." Captain Trevelyan met with it near Kingwilliamstown, and Mr. T. Ayres procured one specimen in the bare open country of the Transvaal, but the exact locality is not recorded.

Fringillaria striolata.

Fringillaria striolata, Licht. Verz. Doubl. p. 24 (1823) *Nubia;* Sharpe, Cat. B. M. xii. p. 561 (1888) *Asia;* Hawker, Ibis, 1899, p. 64 *Somali.*

Emberiza striolata, Sharpe and Dresser, B. Eur. iv. p. 197, pl. 213 (1871).

Fringillaria saturatior, Sharpe, Bull. B. O. C. xi. p. 47 (1901) *Lake Stefanie.*

Adult. Head and upper parts generally very like those of *F. septemstriata*, but readily distinguished by the entire throat below the white chin and the crop being black with broad hoary grey edges to the feathers, and the breast, thighs and under tail-coverts sandy buff; under wing-coverts rufous buff; quill brown, with very broad cinnamon inner margins, which colour does not quite extend across the inner webs. "Upper mandible brown, lower one yellow; legs yellow; feet brownish yellow" (A. O. Hume). Total length 5·1 inches, culmen 0·4, wing 2·8, tail 2·3, tarsus 0·6. Somali (Hawker).

Type of F. saturatior. Upper parts brown with pale brown edges and blackish centres to the feathers; wings and tail dark brown, with the edges of the feathers cinnamon, broadest and brightest on the wing-coverts and centre quills, and narrower on the primaries and inner tail-feathers; under wing-coverts and broad inner edges to the quills pale cinnamon. Sides of head and the upper throat blackish, with the eyebrow, an incomplete streak behind the eye and a better defined band on each side of the upper throat, brownish buff; remainder of the throat and the crop dusky blackish, mottled with ashy brown edges to the feathers; under surface of the body, thighs and under tail-coverts rufous-buff, inclining to pale cinnamon; under tail-coverts with faintly marked dark brown centres. Iris black; bill with the upper mandible green and the lower one yellow. Total length 5·1 inches, culmen 0·4, wing 2·75, tail 2, tarsus 0·8. Lake Stefanie (Donaldson Smith.)

The Striolated Rock-Bunting ranges over North-east Africa, between 4° and 20° N. lat., and eastward over southern Asia from Palestine into India.

The most southern range I ascribe to this species is Lake Stefanie in Equatorial Africa, here Dr. Donaldson Smith procured the type of *F. saturatior.* This single bird is rather darker than any of the other specimens of *F. striolatus* I have seen, but in my opinion it is a young female of the present species which has nearly completed its first moult.

In the British Museum there is a specimen without a label, received from Mr. Hawker, who was the first to record the species from Somaliland.

Rüppell found this Bunting frequenting the sandy wastes in the neighbourhood of the Nile from Shendi to Ambukol and procured the type at the latter place, which is spelt Embukohl by Lichtenstein, who first described the species. Heuglin records the species as occurring in the highlands through which the Atbara flows, from Kordofan, and he noticed it in Nubia as far north as 20° N. lat. Here he found the birds frequenting the stony desert country interspersed with bushes and grass. They were shy, and preferred hiding amongst stones to taking wing; they had the moderate Bunting-like note, not loud but lively. The African, or typical race, appears to me to be generally slightly darker than the Indian or Asiatic form, especially on the back and rufous portion of the quills; the latter differing from the former to about the same extent as *F. insularis* of Grant and Forbes differs from *F. tahapisi* (Smith).

Fringillaria septemstriata.

Emberiza septemstriata, Rüpp. N. Wirb. Vög. p. 86, pl. 30, fig. 2 (1835) *Abyssinia.*

Fringillaria septemstriata, Sharpe, Cat. B. M. xii. p. 559 (1888) *Niger, Shoa, Abyssinia;* Salvad. Ann. Mus. Genov. 1888, p. 269 *Shoa;* Hartert, Kat. Vög. Mus. Senck. p. 51 (1891) *Abyssinia;* Kuschel, J. f. O. 1895, p. 342 *egg;* Shelley, B. Afr. I. No. 247 (1896); Hartert, Nov. Zool. 1899, p. 414 *Gambaga;* Grant, Ibis, 1900, p. 137 *Abyssinia;* Alexander, Ibis, 1902, p. 296 *Gold Coast.*

Very similar to *F. tahapisi* in all its plumages, from which it is distinguishable only by the greater amount of cinnamon on the wings, this colour entirely crossing the basal two thirds of the inner webs of all the quills, excepting the innermost ones. This rufous colour forms a distinct uniform patch on the upper surface of the closed wings, owing to the extent of the rufous colour which crosses most of the outer webs. The tail sometimes

shows more rufous on the outer feathers. "Iris dark brown; upper mandible dusky, lower one yellowish; feet horn colour." Total length 5·5 inches, culmen 0·4, wing 3·1, tail 2·7, tarsus 0·65. ♂, 16. 8. 68. (Blanford.)

The Red-winged Rock-Bunting inhabits northern Tropical Africa, ranging from Senegambia to the Niger and eastwards into Abyssinia.

The Paris Museum contains a specimen from Senegambia procured by Mr. Arsènes, and it has been recorded from the same country by M. Rochebrune. Captain Giffard has obtained a male at Gambaga in October and Captain Boyd Alexander also met with the species there in January, he also procured a pair at Gonieri in May, 1901. In the British Museum there is a specimen from the Niger, which formed part of the collection made by W. A. Forbes during his fatal journey up that river, and as it was not labelled was probably one of the last specimens he shot before he died at Shonga, January 14, 1883.

On the opposite side of the continent the species is generally distributed over Abyssinia, and it appears to me that the occurrence of this species further south is very doubtful, for the specimens collected by Mr. Lort Phillips in Somaliland and by Mr. Jackson at Ulu in Ukambani, referred to this species, really belong to *F. tahapisi*. In Southern Abyssinia and Shoa both species occur, and have been procured by Lord Lovat and Antinori, for in the British Museum there are specimens of this species labelled "Gerru, ♂, 6. 2. 99 (Lord Lovat)," and "Shoa, ♂, 16·8 (Antinori)," and nine others from further north: Bejook, Ain, Senafé and Sahati, collected by Dr. Blanford and Mr. Jesse.

Brehm records these Buntings as common along the banks of the Nile in Southern Nubia, and he found them in April on the Samhar coast and in the less elevated portion of the highlands to the east of Massawa. Heuglin met with them

breeding in December along the half dried water-courses near Gondar, and describes the nest as composed of grass and placed on the ground behind a stone or bush : it contained two or three eggs, white or pinkish, with brown freckles mostly on the thicker end : he figures the egg (Orn. N. O. Afr. pl. 48, fig. 8).

Fringillaria tahapisi.

Emberiza tahapisi, Smith, Rep. S. Afr. Exped. App. p. 48 (1836) *N. Natal;* Reichen. J. f. O. 1892, p. 50, *Bukoba;* id. Vög. D. O. Afr. p. 194 (1894) *Igonda;* Fleck, J. f. O. 1894, p. 410 *Bastardland;* Neum. J. f. O. 1900, p. 287 *E. Afr.*

Fringillaria tahapisi, Hartl. Orn. W. Afr. p. 266 (1857); id. J. f. O. 1860, p. 141 *Gaboon;* Buckley, Ibis, 1874, p. 383 *Transvaal;* Ayres, Ibis, 1886, p. 290 *Transvaal;* Sousa, Jorn. Lisb. 1887, p. 47 *Cape Delgado;* Sharpe, Cat. B. M. xii. p. 558 (1888) *Gaboon, Cape Col. Kingwilliamstown, Tete, Socotra;* Tristram, Ibis, 1889, p. 227 *Ugogo;* Hartl. Abhandl. nat. Ver. Brem. 1891, p. 25 *Baguero, Ussongo;* Sharpe, Ibis, 1891, p. 259 *Ukambani;* Shelley, Ibis, 1894, p. 23 *Zomba;* id. B. Afr. I. No. 246 (1896); Sharpe, Ibis, 1897, p. 514 *Zulu;* Shelley, t. c. p. 527 *Karonga;* Lort Phillips, Ibis, 1898, p. 399 *Somali;* Shelley, Ibis, 1899, p. 367 *Tanganyika Plateau;* Alexander, *t. c.* p. 564 *Zambesi;* Stark, Faun. S. Afr. B. i. p. 189 (1900); Hartert, Nov. Zool. 1900, p. 43 *Albert Edward Nyanza;* Grant, Ibis, 1900, p. 137 *S. Abyssinia;* Marshall, *t. c.* p. 240 *Mashona;* Shelley, Ibis, 1901, p. 587 *Angoniland;* Grant and Reid, *t. c.* p. 626 *S. Abyssinia.*

Fringillaria rufa, Swains. Classif. B. ii. p. 290 (1837) *descr. null.*

Polymitra capistrata, Cab. Mus. Hein. i. p. 129 (1850) *S. Afr.*

Emberiza capistrata, Reichen. J. f. O. 1887, p. 73 *Kagehi.*

Fringillaria capistrata, Reichen, J. f. O. 1887, p. 301 *Manyango.*

Fringillaria insularis, Grant and Forbes, Bull. Liverpool Mus. ii. p. 2 (1900) *Socotra.*

Fringillaria septemstriata (nec Rüpp.) Sharpe, Ibis, 1891, p. 259, *Suk;* Elliot, Field Columb. Mus. Orn. i. No. 2, p. 36 (1897) *Somali;* Lort Phillips, Ibis, 1898, p. 399 *Somali.*

Adult male. Head and throat black, with seven white bands; one dividing the crown from culmen to nape, and on each side, an eyebrow from the nostril to above the ear-coverts, and a band from the gape enclosing the cheeks and lower portion of the ear-coverts, while yet another

extends down the sides of the upper throat; hinder half of neck, back and scapulars blackish brown with paler brown edges. Wings blackish brown, the coverts like the back but with narrower and paler edges; primary coverts and quills more narrowly edged; under wing-coverts and inner margins of quills cinnamon, which colour never reaches across the web to the shaft, and is sometimes absent on the quills. Tail blackish brown with obsolete pale edges, most evident on the outer pair of feathers. Chin and upper throat black, slightly mottled with white, remainder of the under parts pale cinnamon. "Iris dark hazel; upper mandible horn-colour, lower one yellow; legs bright yellow." Total length 5·3 inches, culmen, 0·4, wing 3·2, tail 2·7, tarsus 0·7. ♂, 30. 11. 73. Transvaal T. E. Buckley).

Adult female. Similar to the male; but with the head and throat browner and more dusky and the crown nearly evenly mottled with light and dark brown. "Upper mandible dusky brown, lower one yellow; tarsi and feet pale yellowish." ♀, 15. 1. 85. Potchefstroom (T. Ayres).

Nestling. Similar in plumage to the adults. ♂, 20. 1. 99. Socotra Is. (Grant).

The Southern Cinnamon-breasted Rock-Bunting inhabits Africa, south of a line drawn from the mouth of the Gaboon river to Aden, and is represented on the Island of Socotra by *F. insularis*, Grant and Forbes, which, although generally rather paler in colouring, is not a recognisable subspecies.

F. tahapisi is represented in the more northern portion of Tropical Africa by its near ally, *F. septemstriata*, from which it may be readily distinguished by the rufous colour, when present on the primaries, not crossing the whole of the basal half of their inner webs, and in not having a large uniform patch of that colour showing on the quills when the wings are closed.

In Gaboon the species has been met with by Du Chaillu at Cape Lopez and the Camma river; along the Congo, by Lucan and Petit at San Antonio, near the mouth of that great stream, and a little further inland, by Bohndorff, at Manyango. In Benguela, according to Anchieta, these Buntings are known to the natives of Biballa as the "Kangua," and at Caconda as the "Gungo." From German S.W. Africa I find it only

recorded by Mr. Fleck, and in Cape Colony I cannot trace its range further west than Colesberg.

The type of the species was discovered by Sir A. Smith in the country towards the sources of the Vaal river, and is in the British Museum, which contains also specimens from Eland's Post, Kingwilliamstown and Natal. In Zululand the Messrs. Woodward collected specimens at Eschowe. The late Dr. Stark wrote: "I have generally met with this Bunting on broken hill sides strewn with rocks and partly overgrown with low bushes. Like *F. capensis*, it is of tame and familiar habits and is fond of uttering its broken song from the summit of a stone or low bush, while at intervals it opens and shuts its wings. Its notes resemble those of the Cape Bunting to a certain degree, but are at the same time easily distinguished by the ear, although the difference is not readily pointed out in words. It feeds on small seeds and various insects. A nest taken in Upper Natal in November was built a few inches off the ground, in a low bush sheltered on one side by a rock. The three eggs resemble those of *F. capensis* in colour, but are a trifle smaller than the average of the latter."

Mr. T. Ayres procured specimens at Potchefstroom in February and April and near Rustenburg in May. He writes: "This Bunting affects rocky hill sides with little bush; it is found in small companies and is generally very tame, feeding on the ground." It was not uncommon on the rocky ranges from whence the Mooi river flows, but he considered it to be scarce in Matabeleland, though he met with the species frequenting the rocks near Kanye.

In Mashonaland, according to Mr. Guy Marshall, they are fairly common, resembling *E. flaviventris* in habits, but they take more readily to trees when flushed and are apparently more strictly graminivorous.

From Tete, on the Zambesi, there are five specimens in the

British Museum, and Captain Boyd Alexander during his journey up that river found them breeding in August. In British Central Africa specimens have been collected in Angoniland, at Zomba, Karonga and on the Tanganyika plateau. At Cape Delgado the species has been met with by Sr. Augusto Cardosa.

In German East Africa the species is apparently abundant and generally distributed. In Ugogo it is known to the natives as "Turugu," according to Dr. S. T. Pruen, and specimens have been collected at Igonda, Kagehi, Baguero, Usongo and Bukoba. In the Upper White Nile district Dr. Ansorge has met with these Buntings at Fort George on the Albert Edward Nyanza, and Emin at Kiri in 4° 18′ 10″ N. lat., 31° 40′ 28″ long. I much doubt if the allied species *F. septemstriata* ranges so far south as the Lake district of British East Africa or Somaliland, for all the specimens yet collected by Mr. Jackson and Mr. Lort Phillips are in the British Museum and belong to *F. tahapisi*. These comprise a specimen from Ulu in Ukambani and one from Turquel in the Suk country, where Mr. Jackson found them "very plentiful along the stony banks of the river in the hills, and there are four specimens from the Wagga mountain of Somaliland collected by Mr. Lort Phillips, who writes: "These little Buntings used to frequent the Hankadeely well at mid-day in flocks of about a dozen. I did not meet with them anywhere else during the expedition." Mr. Pease found them abundant in Shoa on "the plateau, perching on stones and rocks in the proximity of water."

In Southern Abyssinia the ranges of *F. tahapisi* and *F. septemstriata* meet, for in the British Museum there are two of the former labelled "Laga Hardim, ♂, 14. 1. 99 (Lord Lovat)" and "Torrente di Farre, ♂, 14. 3. 86 (*Ragazzi*)," and two of the latter—"Gerru, ♂, 6. 2. 99 (Lord Lovat)" and "Mahal-Uonz, 16. 8. 77 (Antinori)."

The most northern and eastern range known to me for *F. tahapisi* is the island of Socotra, from whence there is a good series of specimens in the British Museum, including the types of *F. insularis*. Here they range from the sea level up to 3,500 feet, above which elevation they are said to be replaced by *F. socotrana*.

Fringillaria socotrana.

Fringillaria socotrana, Grant and Forbes, Bull. Liverpool Mus. ii. p. 2 (1900) *Socotra*.

Adult male. Above somewhat similar to *F. tahapisi*, but differing in having a large whitish patch on the rump. Wing: with the lesser and median coverts chestnut, with obscure dusky shaft-stripes; most of the remainder of the wing-feathers with broad chestnut edges, the brown and chestnut colouring on the closed wing being of about equal extent; under surface of quills dark brown with the inner margins buff, like the under wing-coverts. Sides of head, chin and upper half of throat white, with a broad black band through the eye to just beyond the ear-coverts; another broad black band extending through the cheeks and joining the former band behind the ear-coverts, while a very narrow black line divides the sides of the head from the upper half of the throat; remainder of the under parts buff inclining to cinnamon on the lower throat and sides of the chest. "Iris brown; culmen blackish horn; cutting edges of upper and the whole of the lower mandible orange-yellow; tarsi and feet flesh-colour; claws blackish horn." Total length 5·2 inches, culmen 0·45, wing 2·75, tail 2·2, tarsus 0·7. ♂, 6. 2. 99. Adho Dimellus (Grant and Forbes).

The Socotra Rock-Bunting inhabits the island of that name.

The types were discovered by Messrs. Ogilvie, Grant and Forbes, at Adho Dimellus, at 3,500 to 4,500 feet above the sea level, where the species apparently entirely replaces *F. tahapisi*, which is abundant on the lower parts of the island.

Subfamily II. FRINGILLINÆ.

This subfamily comprises the typical Finches, which are distinguished from the Buntings (*Emberizinæ*) by having the cutting edges of the mandibles fitting close together throughout their length, and in the mandibular angle of the chin being very slightly indicated. Both these subfamilies differ from the Grosbeaks (*Coccothraustinæ*, which do not occur in the Ethiopian Region) in the nasal bones not being produced backwards beyond the anterior line of the orbit.

In Africa this subfamily is much better represented than the last, for in the Catalogue of Birds in the British Museum, xii. pp. 170-467 (1888), the species were 176 in number. There are now about 63 known species inhabiting the Ethiopian Region, of which 56 are apparently confined to that area.

KEY TO THE GENERA.

a. Adult with the bill red in life, and some rosy red colouring on the plumage, brightest on the quills and tail . . . . . *Erythrospiza*.

b. No red on the plumage.

a^1. Tail short, less than four times the length of the culmen . . . . . *Linurgus*.

b^1. Tail longer, more than four times the length of the culmen.

a^2. Bill not swollen, but very sharply pointed, with the culmen and sides nearly straight . . . . . *Chrysomitris*.

b^2. Bill swollen, with the culmen and sides curved.

a^3. Basal half of bill much swollen, remainder compressed, causing the sides to be very strongly curved . . . . *Serinus*.

b^3. Bill less swollen, fairly long and more slender, with the sides nearly straight from base to tip.

a^4. Nostrils covered by plumes.

a^5. Crown streaked . . . . . *Poliospiza*.

b^5. Crown uniform . . . . . *Passer*.

b^4. Nostrils exposed. Nest covered above . . . . . *Petronia*.

Genus I. ERYTHROSPIZA.

Bill short, stout and globose, with a slight trace of a culminal ridge sometimes absent; nostrils basal and hidden. Wing, long and pointed; first primary the longest; shortest secondary falling short of the tip of the wing by 1·4 inches; tarsus 0·75. Tail slightly forked, depth of fork 0·3. Tarsi and feet moderate; middle toe with claw 0·75; hind toe with claw 0·5.

Sexes similar in plumage, but the adult differs from the young in having the bill bright red as well as much beautiful rosy-red colouring in the plumage; this is brightest on the quills and tail, while the young are of a sandy brown with the bill pale yellowish brown. The genus ranges from the Mediterranean countries, through Central Asia to China and southward into the north-east African sub-region.

Type.

Erythrospiza, Bp. Saggio, pp. 53, 141 (1831) . . . . E. githaginea.

Erythrospiza githaginea.

Fringilla githaginea, Licht. Verz. Doubl. p. 24 (1823) *Upper Egypt.*
Erythrospiza githaginea, Sharpe, Cat. B. M. xii. p. 284 (1888) *Korosko;* Shelley, B. Afr. I. No. 252 (1896).
Pyrrhula githaginea, Chalihl-Effendi, J. f. O. 1859, p. 469 *Nubia.*
Pyrrhula payraudæi, Audouin, Expl. somm. Pl. Ois. Egypte, p. 286, pl. 5, fig. 8 (1825).

Adult. Wings and tail mostly dark brown; remainder of plumage ashy isabelline, slightly greyer on the crown and whitish on the abdomen and under tail-coverts; front half of the head, mantle, throat, breast and under tail-coverts washed with pink or pale rosy crimson; lower back and upper tail-coverts of a pinkish shade, glossed with pale bright crimson edges to the feathers; greater wing-coverts, quills and tail-feathers partially edged with the same glossy bright crimson. Bill bright orange red in life; iris brown; tarsi and feet brownish flesh colour. Total length 4·8 inches, culmen 0·4, wing 3·4, tail 2·1, tarsus 0·7. ♂, 7. 5. 70. Egypt (Shelley).

In winter plumage the red on the wings, tail and breast is paler and more pink.

Young. Sandy isabelline, slightly paler on the breast; greater portion of wings and tail dark brown with broad isabelline edges to the feathers; no red on the plumage.

The Trumpeter Bullfinch ranges from Nubia over North Africa generally eastwards into India.

Brehm records the species as being plentiful on the Bajuda desert to the south of Dongola in about 18° N. lat., which is as far south as the species is known to range. Chalihl Effendi informs us that it is well known to the Egyptians under the name of "Asfur el hadjar" (Little Stonebird). He found it in Nubia and Egypt generally in large flocks of about eighty individuals, between the river and the mountains, and especially frequenting the wilder and more rocky localities. It is very tame, but keeps apart from other species, even at the desert wells, at which it is to be found in every oasis. According to Dr. Leith Adams, it breeds among the old tombs at Thebes, associating there with the Domestic Sparrow, and it begins to pair about the end of January.

This pretty little Finch, rendered so conspicuous by its bright red bill and roseate tints, I found very plentiful in Nubia and Upper Egypt in pairs and flocks along the confines of the desert during the early spring. It invades the cultivated land for its food, which apparently consists entirely of small seeds, and at such times I have seen them clustered in groups upon the mustard and other plants, which wave to and fro under the weight of the birds as they busily peck away at the seeds. In flight they much reminded me of Linnets. According to Heuglin this Rose Finch is a poor songster; its call note is a hollow "ter-ter"; but at times it pours forth a loud trumpet-like sound.

The eggs are pale greenish with scattered rufous dots, most numerous about a zone at the thick end, and measure 0·8 × 0·58.

Genus II. LINURGUS.

This genus is distinguishable from all the others found in the Ethiopian Region by the comparatively short tail, which does not measure four times the length of the culmen.

Bill rather stout and fairly long, with the culmen curved and the sides

nearly straight from the base to the tip. Nostrils hidden. Wing somewhat rounded; first primary slightly shorter than the next three; shortest secondary falling short of the tip of the wing by rather less than the length of the tarsus. Hind toe about two-thirds of the length of the middle toe; the latter being about equal in length to the tarsus, which is of about the same size as in all the Ethiopian members of this family.

	Type.
Linurgus, Reichenb. Syst. Av. pl. 78, fig. 9 (1850) . . .	L. olivaceus.
Phæospiza, Bocage, Jorn. Lisb. 1888, p. 148	L. thomensis
Hyphantospiza, Reichen. J. f. O. 1892, p. 222	L. olivaceus.

KEY TO THE SPECIES.

a. Plumage nearly uniform tawny brown, darker above than below.	
a^1. Of a more rufous shade; throat and breast rusty brown	*rufibrunneus.*
b^1. Of a less rufous shade; throat and breast buffy brown	*thomensis.*
b. Under surface of body yellow; back uniform olive; head, in adult males entirely black, in females and young dusky olive.	
c^1. Bill longer	*olivaceus.*
d^1. Bill shorter	*kilimensis.*

Linurgus rufibrunneus.

Linurgus rufobrunnea, Gray, Ann. and Mag. Nat. Hist. (3) x. p. 444 (1862) *W. Afr.*

Poliospiza rufibrunnea, Sharpe, Cat. B. M. xii. p. 346, pl. 6 (1888) *Prince's Is.*; Shelley B. Afr. I. No. 278 (1896).

Buserinus rufilatus, Hartl. P. Z. S. 1866, p. 328 *Prince's Is.*

Adult. Upper parts rufous brown, partially mottled with dark centres to the feathers of the crown, back of neck and mantle; wings and tail dark brown with paler and more rufous edges to the feathers; sides of head dark tawny brown; under parts moderately pale rusty brown, rather darker on the lower throat and sides of the body, where the dark centres of the feathers are partially visible; under wing-coverts rusty brown like the breast. Iris brown; bill dark brown with the under mandible pale; tarsi and feet brown. Total length 5·3 inches, culmen 0·5, wing 3·1, tail 1·7, tarsus 0·8. ♂, 11. 8. 95. Prince's Is. (Keulemans).

Immature. Similar to the adults, but less rufous, especially on the under parts, which very nearly approach in colouring to *P. thomensis*. Total length 5·2 inches, culmen 0·55, wing 3·3, tail 2·2, tarsus 0·85. Type of the species (Mus. Brit.).

The Prince's Island Short-tailed Finch is probably confined to Prince's Island.

In the British Museum there are three specimens: the type labelled "West Africa," and the other two from Prince's Island. Here Dr. Dohrn found a few of these Finches in a very restricted locality of the large western bay. He says that they were very fine songsters.

Linurgus thomensis.

Phæospiza thomensis, Bocage, Jorn. Lisb. 1898, p. 148 *St. Thomas Is.*
Poliospiza rufobrunnea (nec Gray) Bocage, Jorn. Lisb. 1889, p. 232 *St. Thomas Is.*

Male. Very similar to the type of *L. rufobrunneus*, but of a decidedly less rusty shade; chin, throat and breast buffy brown; sides of head and neck dark brown, and the crop, sides of body and under tail-coverts washed with dark brown. Iris pale hazel; bill brown, paler on the lower mandible; tarsi and feet brown. Total length 5·5 inches, culmen 0·55, wing 3·2, tail 2·1, tarsus 0·85. ♂, 27. 6. 88. St. Thomas Is. (F. Newton).

The Saint Thomas' Short-tailed Finch is confined to the Island of St. Thomas.

The type was procured on this island by Mr. Francisco Newton, at Molita, some 250 feet above the sea, and is known to the inhabitants as the "Padé," evidently a corruption for "Pardal," the Portuguese name for our Common House-Sparrow. Two examples of this species had previously been collected by Dr. Albino Giraldes, and there are now three specimens in the British Museum, presented by the Lisbon Museum, so that we may presume that the species is not uncommon on the island.

Linurgus olivaceus.

Coccothraustes olivaceus, Fraser, P. Z. S. 1842, p. 144 *Fernando Po.*
Pyrrhospiza olivaceus, Sharpe, Cat. B. M. xii. p. 434 (1888) *Fernando Po, Camaroons.*
Hyphantospiza olivacea, Reichen. J. f. O. 1892, pp. 188, 222; 1894, p. 40 *Buea;* Sjöst. Svensk. Vet. Ak. Handl. 27, No. 1, p. 92 (1895).
Linurgus olivaceus, Shelley, B. Afr. I. No. 304 (1896).

Adult male. Entire head and throat jet black, ending in a point on the crop; mantle uniform yellowish olive, inclining to yellow on the back of the neck, lower back and upper tail-coverts; wing-coverts like the back but with broad bright yellow terminal margins to the greater coverts, forming a distinct bar on the wing; quills blackish, with broad outer edges of bright yellow on the secondaries, shading into olive on the basal half of the feathers; under surface of the wings with the quills dusky black broadly margined on the inner webs with ashy white like the coverts, the latter partially washed with yellow. Tail brownish olive, the feathers fading into yellow towards the edges. Sides of neck, crop, breast and under tail-coverts deep yellow with a slight olive shade on the flanks. Iris brown, "bill and legs yellow" (Fraser). Total length 5·6 inches, culmen 0·55, wing 3, tail 2, tarsus 0·75. Camaroons (Burton).

Female. Differs in the head being dark ashy olive, and the neck, crop and sides of body yellowish olive; culmen 0·5, wing 2·1, tail 1·8, tarsus 0·7. Fernando Po (Fraser).

Fraser's Short-tailed Finch inhabits Fernando Po and the Camaroons.

The type, which is now in the British Museum, was discovered by Fraser, at Clarence, on Fernando Po.

In the Camaroons, the late Sir A. Burton found these Finches at an elevation of 7,000 feet, and more recently Dr. Preuss has procured the species in these mountains at Buea, and Mr. Sjöstedt met with it on one occasion at Bibundi.

Linurgus kilimensis.

Hyphantospiza kilimensis, Reichen. and Neum. Orn. Monatsb. 1895, p. 74 *Kilimanjaro.*
Linurgus kilimensis, Reichen. in Werth. Mittl. Hochl. N. Deutsch, O. Afr. p. 275 (1898); Neum. J. f. O. 1900, p. 289 *Kilimanjaro.*

Type.—"Similar to *L. olivaceus*, but with the bill shorter; upper surface of the body and the wing-coverts obscure olive green; upper tail-coverts

1. Chrysomitris totta.
2. Serinus capistratus.

yellower; no yellow separating the crown from the olive of the back; tail-feathers olive green with their inner webs blackish and with yellow ends; throat black surrounded by golden yellow; flanks washed with olive. Bill dull pale lemon yellow; feet rosy yellow." (Oscar Neumann.)

The Kilimanjaro Short-tailed Finch inhabits the mountain of Kilimanjaro.

The type is a male procured by Mr. Oscar Neumann on Mount Kilimanjaro, at an elevation of between 9,000 and 10,000 feet, and I am not aware of any other specimen having been obtained. I do not find in the description any character for distinguishing this form from the immature male of *L. olivaceus*, and should not be surprised if the type proved to be a young bird of that species.

Genus III. CHRYSOMITRIS.

Bill rather long and attenuated, very acute, and the sides not swollen but proceeding in a straight line to the tip. This latter character distinguishes its members from all the other Ethiopian Finches. Nostrils hidden by bristles. Wing, with the three first primaries longest and about equal; secondaries falling short of the tip of the wing by more than the length of the tarsus. Tail generally, but not always, slightly forked.

Type.

Chysomitris, Boie, Isis, 1828, p. 322 . . . . . C. spinus.

The genus ranges over Europe, Asia, Africa and America and is represented by about 24 species, of which only 1 occurs in the Ethiopian region, and this is confined to South Africa.

Chrysomitris totta. (Pl. 24, fig. 1.)

Loxia totta, Sparrm. Mus. Carls. i. pl. 18 (1786) *Cape.*

Chrysomitris totta, Sharpe, Cat. Birds B. M. xii. p. 231 (1888) *Cape Col.*; Shelley, B. Afr. I. No. 250 (1896); Stark, Faun. S. Afr. B. i. p. 182 (1900).

Adult. Upper parts brown with a wash of yellow on the rump; crown, back of neck and the upper tail-coverts paler brown than the mantle and with faintly marked darker shaft-stripes, quills and tail-feathers darker uniform brown with white terminal edges, broadest on the tail, especially on the outer feathers; under surface of wings brown with whitish brown under wing-coverts; sides of head as well as the thighs and under tail-coverts uniform pale brown; throat and breast dull yellow. "Iris brown; bill pale

brown; tarsi and feet brown" (Stark). Total length 4·9 inches, culmen 0·35, wing 2·7, tail 2, tarsus 0·6. Cape (Sir A. Smith).

Females have the throat apparently paler, more ashy and more strongly striped, and the sides of body washed with brown.

This species may be readily recognised, not only by its slender bill, but also by the tail being slightly rounded and having a white tip to each of the feathers.

The Cape Siskin inhabits Cape Colony.

This is the only known representative of the genus *Chrysomitris* in South Africa. According to Layard the "Pietje Canarie," as it is called by the Dutch colonists, frequents open and ploughed lands. It is said that the cock will breed with the hen Yellow Canary in captivity; but the hen will not breed with the male of the other species, possibly from the unwillingness of the wild hen to build in a cage. It was a very common species at East London.

The late Dr. Stark wrote: "It is of somewhat local distribution, abundant in certain localities and quite absent from others, apparently equally well adapted to its habits. It may be often met with on bush-covered hill sides, and appears to prefer hilly to more level ground. It feeds on small seeds, buds of trees and insects. The nest is placed in a bush from 2 to 4 feet above the ground and is built of grass-stems, small rootlets and pliant twigs, lined with down and occasionally a few hairs. The eggs are four or five in number, pale bluish green sparingly spotted and sometimes zoned with reddish brown of two shades They average 0·72 × 0·54."

Genus IV. SERINUS.

Bill short and stout, much swollen for the basal half and then compressed towards the tip, causing the sides to be much bent; nostrils basal and hidden. Wing moderate, the shortest secondary falling short of the tip of the wing by a little more than the length of the tarsus; second and third primaries generally the longest. Tail moderate and slightly forked, more than four times the length of the culmen. Legs and feet moderate. Nest cup-shaped.

The genus is spread over the whole of Africa, Southern Europe and Central Asia. It includes about 35 known species, of which 30 occur in the Ethiopian Region only. Of these, none are natives of the Madagascar subregion, although a few have become acclimatised there. They are all good songsters and hardy cage-birds. The genus may be divided into several apparently very natural groups which somewhat overlap each other; but I fail to see any advantage to be derived by separating *S. bertoni* from the typical species of *Rhynchostruthus*, it is so much more nearly allied to the latter than to the type of *Serinus*, and the type of *Alario* differs only from *S. angolensis* in the peculiar colouring.

	Type.
Serinus, Koch, Syst. baier. Zool. p. 228 (1816) . . .	S. serinus.
Crithagra, Swains. Zool. Journ. iii. p. 348 (1827) . .	S. sulphuratus.
Alario, Bp. Consp. i. p. 519 (1850)	S. alario.
Rhynchostruthus, Scl. and Hartl. P. Z. S. 1881, p. 170	S. socotranus.

KEY TO THE SPECIES.

a. With a considerable amount of yellow on the under surface of the body.
  *a*¹. Centre of forehead next to the culmen not greenish like the crown.
    *a*². Forehead not entirely uniform bright yellow; chin never yellow nor clear white, black in adult males.
      *a*³. Males with the entire head and throat jet black; females with only the front half of the crown dusky; wings blackish with two broad oblique yellowish-white bars . . . . . *nigriceps*. [2]
      *b*³. Head never entirely black, nor with the front half of the crown dusky.

a^4. Larger; wing not less than 2·6 inches; forehead black, meeting the olive crown, or with only a few intervening yellow feathers (females of both species similar in plumage).

a^5. Bill slighter; throat less shaded with olive . . . . . *citrinelloides*, ♂, *ad.* 182

b^5. Bill stouter; throat more shaded with olive . . . . . *scotops*, ♂, ♀. 184

b^4. Smaller; wing less than 2·6 inches; forehead black; separated from the olive crown by a broad uniform yellow band . . . . . *capistratus*, ♂, *ad.* 185

b^2. Forehead, eyebrow and throat white . . *madaraszi.* 186

c^2. Forehead entirely uniform bright yellow.

c^3. Front half of head mostly uniform yellow with no sharply defined eyebrow; abdomen and thighs whitish; wing more than 3·0 inches.

c^4. Back of head and back and sides of neck grey, contrasting with the back . . . . . *canicollis.* 186

d^4. Back of head and back and sides of neck yellowish green like the mantle.

c^5. Smaller; wing about 3·1; abdomen white; under tail coverts yellow . . . . . *flavivertex.* 189

d^5. Larger; wing about 3·35; abdomen and under tail-coverts yellowish white . . . . . *huillensis.* 190

d^3. With a sharply defined broad yellow eyebrow.

e^4. Abdomen and under tail-coverts white . . . . . *dorsostriatus.* 191

f^4. Abdomen and under tail-coverts bright yellow.

e^5. Smaller; bill weaker; generally with white ends to many of the tail-feathers; sexes similar; immature with some blackish spots on the throat.

a^6. Crown like the mantle; stripes on mantle fairly broad; tail-feathers with yellowish white ends much more strongly marked . . . . . *butyraceus.*

b^6. Crown greyer; stripes on mantle narrow; pale ends to tail-feathers smaller or absent. *hartlaubi.*

d^5. Larger; bill stouter; no pale ends to tail-feather. (Females and young brown and buff, with only a wash of yellow on the rump, and edges of the quills and tail-feathers).

c^6. Crown, mantle and lower back more green than yellow; bill slightly smaller . . . . . *flaviventris*, ♂, *ad.*

d^6. Crown and mantle yellower; lower back bright yellow; bill slightly larger . . . . . *marshalli.*

b^1. Centre of forehead next to the culmen greenish like the crown; sexes similar in plumage.

d^2. Flanks uniform; no white feathers on the abdomen; throat brighter yellow than the crop.

e^3. Yellower; size smaller; wing about 3·0 inches . . . . . *imberbis.*

f^3. Greener; size larger; wing about 3·25 inches . . . . . *sulphuratus.*

e^2. Flanks with a few blackish streaks; a few white feathers on the abdomen; wing about 3·25 inches . . . . . *donaldsoni.*

b. No yellow on the under surface of the body.

c^1. Some yellow on the edges of the quills and tail-feathers.

f^2. A considerable amount of bright yellow on the wings and tail.

g^3. Under parts uniform.

g^4. Ear-coverts white.

e^5. Crown black . . . . . *socotranus*, ♂, *ad.*

f^5. Crown brown . . . . . *socotranus*, ♀, *ad.*

h^4. Ear-coverts ashy . . . . . *louisæ.*

h^3. Under parts streaked. Young of *socotranus* and *louisæ.*

g^2. With a small amount of dull yellow on the wings and tail, confined to the margins of the quills and tail-feathers.

i^3. Crop more uniform brown than the flanks; throat mostly brown with the chin blackish.

i^4. Breast whiter; flanks more strongly streaked . . . . . *burtoni.* 209

k^4. Breast more isabelline; flanks less streaked . . . . . *albifrons.* 210

k^3. Crop strongly streaked like the flanks.

l^4. Throat white.

g^5. No shade of yellow on the lower back . . . . . *striolatus.* 211

h^5. Lower back washed with yellow.

e^6. Darker; below more strongly streaked . . . . . *flaviventris*, ♀.

f^6. Paler; below less strongly streaked . . . . . *inberbis*, ♀.

m^4. Throat and a broad eyebrow, yellow *whytei.* 212

d^1. No yellow on the wings or tail.

h^2. Smaller; wing not more than 2·7 inches.

l^3. Tail chestnut or bright cinnamon . . *alario.* 213

m^3. Tail earthy brown.

n^4. Lower back pure white . . . . . *leucopygius.* 214

o^4. Lower back bright yellow.

i^5. Some white ends to the tail-feathers . . . . . *angolensis.*

k^5. No white ends to the tail-feathers.

g^6. Plumage more streaked; flanks streaked . . . . . *reichenowi.* 215

h^6. Plumage less streaked; flanks uniform.

a^7. Chin and throat entirely white . . . . . *xanthopygius.* 216

b^7. A yellow patch on the throat *flavigula.* 217

i^2. Larger; wing not less than 2·8 inches.

n^3. Paler; rump yellowish.

p^4. Paler; rump bright yellow . . . *crocopygius.* 222

q^4. Darker; rump only washed with yellow . . . . . *albigularis.* 223

o^3. Darker; rump brown like the mantle *leucopterus.* 224

Serinus nigriceps.

Serinus nigriceps, Rüpp. N. Wirb. Vög. p. 96, pl. 34, fig. 2 (1835-40) *Abyssinia.*

Chrysomitris nigriceps, Sharpe, Cat. B. M. xii. p. 222 (1888) *Abyssinia;* Salvad. Ann. Mus. Genov. 1888, p. 274 *Shoa;* Hartert, Kat. Vög. Mus. Senck. p. 58 (1891); Shelley, B. Afr. I. No. 248 (1896); Nehrkorn, Kat. Eiers. p. 107 (1899) *egg;* Grant, Ibis, 1900, p. 134; id. and Reid, 1901, p. 624 *S. Abyssinia.*

Adult male. Entire head and throat jet black; sides and back of neck, upper back and upper tail-coverts dull yellow inclining to dusky brown towards the centres of the feathers; lower back uniform, rather brighter yellow; most of the scapulars and the lesser wing-coverts pale yellow. Wings black, with broad yellowish buff terminal margins to the median and greater coverts forming two diagonal bars; quills tipped with white shading into yellow on the outer edges of the feathers, which edges are very narrow on the primaries; primary-coverts with incomplete narrow white edges; under surface of quills with their inner edges whitish ash; under-coverts whitish ash washed with dull yellow, of the same colour as the chest; abdomen slightly brighter yellow; thighs brownish buff; under tail-coverts yellowish white. Tail black with very narrow whitish edges. "Iris brown; bill and feet blackish." Total length 4·9 inches, culmen 0·35, wing 3·1, tail 2, tarsus 0·65. ♂, 5. 1. 1901. Adis Ababa (Pease).

Adult female. Differs in having no jet black on the head, which is olive brown like the mantle, but with the forehead and front half of the crown dusky blackish; head, neck and mantle slightly mottled with dark shaft-stripes. Total length 4·8 inches, culmen 0·35, wing 2·7, tail 2, tarsus 0·65. ♀, 5. 1. 1901. Adis Ababa (Pease).

The Abyssinian Black-headed Canary inhabits North-east Africa.

Lord Lovat and Mr. Pease found the species abundant on the cultivated ground of Gallaland and Southern Abyssinia, where specimens have also been collected by Antinori and Dr. Ragazzi. Heuglin records it as a lively bird, with a true Siskin-like song, and met with it in Gallaland and the highlands of Abyssinia, up to 12,000 feet, frequenting the farm-lands for its food. Dr. Blanford writes: "Only seen at considerable elevations, but very common on the passes above 9,000 feet. It appears to belong to the subalpine fauna, though a specimen was shot by my collector at Adigrat. It was always met with

in flocks, keeping to open ground and often seen in ploughed fields."

An egg from Dongola in Mr. Nehrkorn's collection is described as bluish-white with a few distinctly marked brown dots; 0·64 × 0·5.

Serinus citrinelloides.

Serinus citrinelloides, Rüpp. N. Wirb. Vög. p. 95, pl. 34, fig. 1 (1835-1844) *Abyssinia.*

Chrysomitris citrinelloides, Sharpe, Cat. B. M. xii. p. 229 (1888) *Kilimanjaro, Senafé;* Salvad. Ann. Mus. Genev. 1888, p. 274 *Shoa;* Shelley, P. Z. S. 1889, p. 367 *Kilimanjaro;* Hartert, Kat. Vög. Mus. Senck. p. 58 (1891); Reichen. Vög. D. O. Afr. p. 197 (1894); Shelley, B. Afr. I. No. 249 (1896); Grant, Ibis, 1900, p. 134; id. and Reid, Ibis, 1901, p. 624 *S. Abyssinia.*

Fringilla melanops, Heugl. J. f. O. 1868, p. 92 *Abyssinia.*

Chrysomitris melanops, Fisch, J. f. O. 1885, p. 136 *Arusha, Naiwasha;* Sharpe, Cat. B. M. xii. p. 229 (1888); Reichen. Vög. D. O. Afr. p. 197 (1894) *Karagwe, Bukoba;* Jackson, Ibis, 1899, p. 618 *Nandi.*

Serinus scotops (nec Sundev.) Shelley, Ibis, 1894, p. 22 *Zomba;* 1898, p. 553 *Nyasaland.*

Adult male. Upper parts yellowish green, with black shaft-stripes to the feathers of the crown, hind neck, mantle and upper tail-coverts; rump uniform. Wings brownish black with broad yellow edges to the coverts and inner secondaries, the lesser coverts greener like the back, the median and greater coverts forming moderately distinct diagonal yellowish bands on the wings; primary coverts and most of the quills narrowly edged with yellow; under surface of quills dusky brown with partial buffy brown inner margins; axillaries and under wing-coverts bright yellow, with a few dusky bars on the pinion; tail-feathers brownish black, with narrow greenish yellow edges. Head with a very narrow frontal-band, front half of sides of head and a broad chin-spot black; eyebrows bright yellow; ear-coverts olive; remainder of the throat, breast, thighs and under tail-coverts bright yellow, washed with olive on sides of crop, and streaked with black on the flanks. "Iris brown; bill dark; legs black." Total length 4·7 inches, culmen 0·4, wing 2·65, tail 2·1, tarsus 0·6. ♂, 30. 11. 99. Nairobi (Delamere).

Adult female. Differs from the male in having no black on the head and no yellow eyebrow; forehead like the crown but slightly yellower; sides of head uniform olive; chin ashy buff; throat and sides of body strongly striped with black. "Iris brown; bill dark; legs brown." Total

length 4·5 inches, culmen 0·4, wing 2·55, tail 1·9, tarsus 0·55. ♀, 30. 11. 99. Nairobi (Delamere).

Immature. Similar in pattern to the adult female but differing in the pale portions of the feathers being light rufous shaded brown on the upper parts and brownish buff on all the under parts, and the entire chest very strongly streaked. "Iris brown; bill dusky green; legs dusky." ♂, 17. 3. 00. Mt. Kenya (Delamere).

Ruppell's Masked Canary inhabits Eastern Africa between 15° S. lat. and 15° N. lat.

This species replaces its southern ally *S. scotops* to the north of the Zambesi river, and is apparently not uncommon in Nyasaland, where Mr. Alexander White and Consul Alfred Sharpe have both met with it, at least as far south as Zomba.

Fischer collected specimens in Arusha and at Lake Naiwasha, and the species has been recorded from German E. Africa at Karagwe, and as far west as Bukoba. In British E. Africa these Finches are apparently abundant, for in the British Museum there is a specimen from Lake Sanné in Uganda, and a fine series from the highlands of Kilimanjaro and Kenia. Mr. Jackson procured the species at Nandi, and informs us that its Suaheli name is "Chiriko."

The species, although not recorded from the Somali country, is not uncommon throughout Abyssinia to as far north as Senafé.

Lord Lovat, during the Weld-Blundell expedition from Berbera to the Blue Nile, shot specimens at Harrar Meyer, Warabili and Bilo, and writes: "We usually met with this Siskin singly or in pairs, in company with flocks of *Quelia æthiopica*."

Specimens have also been procured by Mr. Pease at Adis Ababa, and by Antinori and Ragazzi at Mahal Uonz and Sciotalit.

According to Heuglin these Finches are plentiful around Gondar, where he procured the type of his *Fringilla melanops*,

and found them fairly abundant throughout the warmer parts of Abyssinia. At Senafé, which is about the northern limit of the range of the species, Dr. Blanford obtained a specimen which is now in the British Museum.

Serinus scotops.

Crithagra scotops, Sundev. Œfv. K. Vet. Akad. Förh. Stockh. 1850, p. 98 *Transvaal.*

Serinus scotops, Sharpe, Cat. B. M. xii. p. 362 *Cape Col. Transvaal;* Shelley, B. Afr, I. No. 293 (1896); Stark, Faun. S. Afr. B. i. p. 177 (1900).

Adult. Forehead blackish; crown, back of neck, back, scapulars and wing-coverts yellowish green strongly streaked with black centres to the feathers; rump and upper tail-coverts uniform, the former washed with yellow; remainder of the wings brownish black, the feathers with pale outer edges of olive yellow, broadest and more yellow at the ends of the median and greater-coverts and the inner secondaries; inner edges of the quills and the under wing-coverts white, the latter washed with yellow. Tail blackish brown, with rather yellowish olive edges to the feathers. A pale yellow eyebrow; sides of head uniform ashy olive; sides of neck, lower throat and crop nearly uniform yellowish green separated from the olive-black chin by a patch of bright yellow; breast and under tail-coverts bright yellow, with the sides strongly streaked with black and slightly tinted with olive. "Iris dark brown; bill dusky, with the under mandible paler; tarsi and feet dusky" (Barratt). Total length 5·4 inches, culmen 0·4, wing 2·9, tail 2·3, tarsus 0·65. ♂, 10. 8. 81. Drakensberg (Butler).

Sundevall's Canary ranges over eastern South Africa, westward to Cape Colony and northward into the Transvaal.

The most western locality known to me for this species is the Knysna in Cape Colony, where Andersson and Victorin both met with it. In the British Museum there are specimens from Eland's Post and the Katberg Forest, obtained by Mr. Atmore.

Colonel E. A. Butler found the species not uncommon in the kloofs on the Drakensberg, near Newcastle, and remarks:

"It associates in small flocks, and has similar habits to *S. canicollis*, but is more of a woodland species."

The type was procured by Wahlberg during his journey into the Transvaal, and in the British Museum there are specimens from Macamac and Lydenburg. In the latter district Mr. T. Ayres found the species "pretty generally distributed amongst the woods and bushes; but seems to prefer the forests, where it feeds among the foliage of the trees."

The present species is remarkably like *S. citrinelloides*, Rupp., from which it chiefly differs in its having a stouter bill, a character which I unfortunately overlooked when I referred the Nyasaland birds to this species (Ibis, 1894 and 1898). I may here remark, that these two Finches differ from each other in much the same manner as my *Parus parvirostris* differs from *P. afer*, Gm., yet these two Finches have generally been placed in different genera.

Serinus capistratus. (Pl. 24, fig. 2.)

Crithagra capistrata, Finsch, in Finsch and Hartl. Vög. O. Afr. p. 458 (1870) *Galungo Alto*.

Serinus capistratus, Sharpe, Cat. B. M. xii. p. 359 (1888) *Landana, Congo;* Reichen. J. f. O. 1892, p. 51 *Bukoba;* Shelley, B. Afr. I. No. 287 (1896).

Fringillaria capistrata, Reichen. J. f. O. 1887, p. 301 *Manyanga*.

Adult male. Front of head jet black, which colour extends in a narrow band across the forehead and widens out considerably on the sides of the head and the chin; the black forehead is succeeded by a broad band of light yellow surrounding the front and sides of the crown; remainder of the upper parts yellowish green, with blackish shaft-stripes on the mantle; rump slightly more washed with yellow; wing and tail blackish brown, with pale edges to the feathers, yellowest at the ends of the median and greater-coverts, outer secondaries and tail-feathers, and green on the lesser wing-coverts and inner secondaries; inner margins of the quills and the under wing-coverts brownish white, the latter washed with yellow; ear-coverts, behind the black portion of the sides of the head and the sides of the neck, yellowish green, like the crown; under parts below the broad black chin yellow, with a few nearly obsolete dusky streaks on the flanks. Iris dark brown. Total length 4·2 inches, culmen 0·4, wing 2·4, tail 0·55.
♂, 3. 83. Landana (Petit).

Adult female. Differs from the adult male in the front of the head being pale ashy yellow inclining to brighter yellow on the forehead, which is spotted with black; crown streaked with blackish and margined on the sides by a yellow eyebrow; throat mottled with olive and rather indistinct blackish shaft-stripes. Wing 2·4. ♀, 2. 88. Landana (Petit).

The Black-faced Canary ranges from the Loango Coast and Angola to the Victoria Nyanza.

On the Loango Coast specimens have been collected by Falkenstein, Lucan and Petit, at Landana and Chinchonxo, and by Sperling at Kabinda. Bohndorff met with the species at Manyanga on the Congo, and the type was discovered by Wellwitsch in the Galunga Alto district of Angola at an elevation of 2,800 feet. These Canaries range inland to the western shores of the Victoria Nyanza, where the species has been found by Emin at Bukoba.

Serinus madaraszi.

Serinus madaraszi, Reichen. Orm. Monatsb. 1902, p. 8 *Myombo.*

Type. "General colouring of the upper parts similar to that of *S. reichenowi* only paler and greyer; edges of the wing-coverts yellowish white; quills with pale yellow outer edges; throat white; breast and under tail-coverts yellow; crop and flanks streaked with grey, of a browner shade on the latter; under wing-coverts washed with yellow. Total length 4·4 inches, culmen 0·36, wing 2·6, tail 1·8, tarsus, 0·52."

Madaraszi's Canary inhabits Central East Africa to the north of Lake Nyasa.

The species, which appears to be a very well marked form, is known to me by the description of the type only. This specimen was discovered by Mr. J. Booth at Myombo, north of Lake Nyasa.

Serinus canicollis.

Crithagra canicollis, Swains. An. in Menag. p. 317 (1837) *S. Afr.*

Serinus canicollis, Sharpe, Cat. B. M. xii. p. 350 (1888); Butler, Foreign Finches in Captivity, p. 27, pl. 6, fig. 1 (1894); Kuschel, J. f. O. 1895, p. 342 *egg;* Shelley, B. Afr. I. No. 280 (1896); Woodward, Ibis, 1897, p. 411 *Zulu;* Nehrkorn, Kat. Eiers. p. 110 (1899) *egg;* Stark, Faun. S. Afr. B. i. p. 168 (1900).

Fringilla cinereicollis, Dubois, Orn. Gal. pl. 104 (1839) *S. Afr.*

Adult male. Forehead, most of the crown, and nearly the whole front of the head deep dull yellow like the entire throat; back of head and back and sides of neck uniform ashy grey, shading into deep olive tinted yellow on the mantle which is obscurely streaked; lower back and upper tail-covert uniform yellow with only an obsolete shade of olive. Wing brownish black, with yellow edges to the feathers, broadest on the inner secondaries and the coverts, and shaded with olive towards the lesser coverts, which are like the mantle; under surface, with the inner margin of the quills and the coverts brownish white partially washed with yellow towards the bend of the wing where there are some blackish bars. Tail pale yellowish brown with bright yellow outer edges and blackish shaft-stripes. Centre of the chest and the under tail-coverts brighter yellow than the throat; abdomen and thighs brownish white; sides of the body ashy buff. "Iris dusky; bill dusky with the lower mandible pale; tarsi and feet dark olive brown." Total length 5·1 inches, culmen 0·35, wing 3·2, tail 2·3, tarsus 0·6. ♂, 8. 7. 78. Rustenburg (W. Lucas).

Male, in breeding plumage. Differs in having all the yellow of the plumage brighter. ♂, 20. 10. Pinetown (T. L. Ayres).

Adult female. Differs, in the grey of the neck encroaching on the yellow of the sides of the head and throat; crown with black shaft-stripes; mantle shaded with brown and with broad dark brown shaft-stripes. Total length 4·8 inches, wing 2·9, tail 2.2. ♀, 20. 8. 81. Drakensburg (Butler).

In immature birds, the yellow on the sides of the head and on the throat is almost replaced by ashy brown and there are a few blackish stripes on the flanks.

The Cape Canary inhabits South Africa, south from Damaraland and the Transvaal, and the species has been introduced into the islands of Réunion and Mauritius.

In the British Museum there are specimens from Elephant river in Damaraland and from Macamac in the Transvaal, and I cannot trace the range of the species any further north. The late Dr. Stark wrote: "This well-known and favourite cage-bird is, in its wild state, a common resident in nearly all districts that are overgrown with bushes or low trees varied with open glades and clearings. It is perhaps most abundant on the bush-clad lower slopes of hills and mountains as well as in gardens and shrubberies, and I have met with it in some numbers among the low scrub on the sandy coast of Little Namaqualand. In autumn and winter small flocks frequent

the more open pasture and ploughed land, to feed, with other Finches and Weaver-birds, on small seeds and insects that they find on the ground. The justly admired song of the Cape Canary is prolonged and very sweet, and is compared by Dr. Russ to that of a Lark. Individual birds, however, even in a wild state, differ remarkably in the singing powers, some being far superior to others in the richness and fulness of their notes. The cock of this species has, in confinement, been known to pair with the hen of the Common Cage Canary and *Serinus flaviventris*.

"In Cape Colony the Cape Canary usually breeds in September and October, in Upper Natal in October and November. The nest, neatly constructed and cup-shaped, is built in a thick low bush, of dry grass and bents, with sometimes a little moss, lined with hair, feathers, and downy seeds. The eggs, three or four in number, are white, faintly tinted with blue, and streaked and spotted at the obtuse end with purplish brown and reddish brown. They measure 0·75 × 0·55."

Messrs. Butler, Feilden and Reid, met with the Cape Canary in winter, frequenting the bush-grown kloofs in the Drakensberg, near Newcastle, and as the breeding season approached was more often found in the open veldt among weeds and scrubby bush, and was breeding in October and November. The nests were chiefly built in the pendant branches of willows overhanging the river. The Messrs. Woodward found them abundant in Zululand, where they remark: "It is well known throughout the country for its sprightly habits and cheerful song."

In the Lydenburg district of the Transvaal Mr. T. Ayres met with them in small flocks generally on the more open slopes of the hills.

The species has been introduced into Réunion and Mauritius, from whence there are specimens in the British Museum, and

in 1866 Schlegel records them from these islands and remarks: "Not observed in Madagascar."

In confinement they should be fed, according to Mr. A. G. Butler, on canary seed, white millet, spray millet, and in summer-time given some green food. If an attempt is made to breed with a pair, a bush of some kind, plenty of soft building material, and some form of egg-food should be provided.

Serinus flavivertex.

Crithagra flavivertex, Blanf. Ann. and Mag. N. H. (4) iv. p. 330 (1869); id. Geol. and Zool. Abyss. p. 414, pl. 7 (1870) *Adigrat.*

Serinus flavivertex, Sharpe, Cat. B. M. xii. p. 351 (1888) *Abyssinia;* Salvad. Ann. Mus. Genov. 1888, p. 274 *Antoto;* Sharpe, Ibis, 1891, p. 257 *Kikuyu;* Reichen. Vög. D. O. Afr. p. 197 (1894) *Arusha;* Shelley, B. Afr. I. No. 281 (1896); Neum. J. f. O. 1900, p. 288 *Kilimanjaro.*

Chrysomitris citrinelloides (nec Rüpp.) Gigl. Ann. Mus. Genov. 1888, p. 13 *Shoa.*

Adult male. Upper half of the head golden yellow, shading off on the nape and hind neck into olive slightly streaked with black; mantle deep olive streaked with blackish centres to the feathers; lower back and broad edges to the tail-coverts yellow; the tail, which is rather strongly forked, has the feathers much pointed and are brown with yellow outer edges. Wing brownish black; lesser-coverts mostly olive yellow; broad terminal margins to the median and greater-coverts and partial outer edges to the feathers, golden yellow; inner lining dusky slate colour with the entire pinion black; axillaries washed with yellow. Side of head, with a black patch in front of the eye, and most of the ear-coverts olive; remainder of the head golden yellow of the same shade as the under parts generally, which pass into white on the centre of the abdomen; thighs brownish white; some blackish streaks on the flanks. Iris brown; bill and legs dark horny brown, with base of lower mandible greyish white. Total length 5·3 inches, culmen 0·35, wing 3·15, tail 2·3, tarsus 0·55. ♂, 4. 9. 89. Kikuyu (Jackson).

Adult female. Differs from the male in having less yellow on the head and throat and all the feathers of the crown showing dark centres; lower back streaked with black; centre of chest as well as the abdomen and under tail-coverts white, the latter streaked with blackish centres to the feathers.

Total length 5·1 inches, culmen 0·35, wing 3·0, tail 2·0, tarsus 0·55. ♀, 29. 8. 89. Kikuyu (Jackson).

The type, a female, has the mantle rather less strongly streaked and the dark streaks on the flanks are scarcely visible.

Blanford's Canary inhabits eastern Africa between 5° S. lat. and 15° N. lat.

The most southern known range for this species is Great Arusha, where Fischer has procured a specimen. At Kifinika on Kilimanjaro, at an elevation of 3,000 feet, Mr. Oscar Neumann shot three of these Canaries in January, 1895, and Mr. Jackson met with the species in the Kikuyu country, in August and September, 1889. In Shoa, according to Dr. Ragazzi these birds are not rare, but he apparently procured only a single specimen.

Heuglin suggests that it is rare in Abyssinia, as he never, to his knowledge, met with the species. The type, a female, was discovered by Dr. Blanford at Adigrat in Tigré, April 21, 1868. This specimen, as well as one obtained by Rüppell, are now in the British Museum.

Serinus huillensis.

Serinus huillensis, Sousa Jorn. Lisb. 1889, p. 40, *Huilla;* Shelley, B. Afr. I. No. 286 (1896).

"*Adult male.* (?) A broad sulphur yellow forehead; crown, back of neck and the mantle yellowish green; rump and upper tail-coverts sulphur yellow; lesser wing-coverts like the mantle; median coverts with broad terminal white margins; the greater coverts similarly margined with yellow; quills with yellow edges broadest on the secondaries; sides of head, throat and chest sulphur yellow like the forehead; abdomen and under tail-coverts yellowish white; thighs white; tail feathers with the edges yellow, broad on the four centre ones and fading into white on the outer ones; under wing-coverts whitish; flanks shaded with green and very slightly streaked. Total length 5·2 inches, wing 3·44, tail 2·44, tarsus 0·6.

"*Female.* (?) Similar to the preceding, but differs in the upper parts being slightly more streaked; abdomen and under tail-coverts whitish; ear-coverts like the mantle but less streaked, and are surrounded by a patch of yellow

which extends to the forehead and blends into the yellow of the under parts. Total length 5 inches, wing 3·24, tail 2·28."

The Huilla Canary inhabits Mossamedes.

The types, apparently a male and female, were procured by Father Antunes at Huilla, and this is all that is yet known regarding this apparently well-marked species, so I have translated Sousa's descriptions of the plumage.

This species appears to me to belong to the group which includes *S. canicollis* and *S. flavivertex*.

Serinus dorsostriatus.

Crithagra dorsostriatus, Reichen. J. f. O. 1887, p. 72 *Kagehi, Wembere, Victoria Nyanza, Shasha.*

Serinus dorsostriatus, Reichen. Vög. D. O. Afr. p. 196 (1894); Shelley, B. Afr. I. No. 300 (1896); Jackson, Ibis, 1899, p. 623 *Elgeyu;* Neum. J. f. O. 1900, p. 288 *Masai.*

Serinus maculicollis, Sharpe, Bull. B. O. C. iv. p. 41 (1895); id. P. Z. S. 1895, p. 470, pl. 27, fig. 1 *Somali;* Shelley, B. Afr. I. No. 303 (1896); Elliot, Field-Columb. Mus. Orn. i. No. 2, p. 36 (1897) *Somali;* L. Phillips, Ibis, 1898, p. 399 *Somali;* Hawker, Ibis, 1899, p. 63 *Somali;* Sharpe, P. Z. S. 1901, ii. p. 302 *Somali;* Grant and Reid, Ibis, 1901, p. 625 *S. Abyssinia.*

Serinus xantholæma, Salvad. Ann. Mus. Genov. 1896, p. 44 *Somali.*

Adult male. Forehead, a broad eyebrow and the lower back canary yellow; crown and back of neck yellowish olive, with narrow blackish shaft-streaks; mantle of the same colour but with broad dark centres to the feathers; upper tail-coverts olive yellow; tail dark brown, the feathers with narrow yellow outer edges and white terminal margin to some of the outer ones. Wing blackish brown, with buffy yellow outer edges to the feathers, narrowest on the primary-coverts and primaries; inner edges of quills and the under-coverts ashy white, the latter washed with yellow, mostly so towards the bend of the wing. Sides of head yellow inclining to white in front of the eye, and shading into pale olive brown on the ear-coverts; an ill-defined mustachial band; chin, throat, and chest bright canary yellow; remainder of breast, thighs and under tail-coverts white; flanks streaked with black. "Iris brown; bill, upper mandible horn-brown, lower one paler; feet dusky brown" (Fischer). Total length 5 inches, culmen 0·35, wing 2·75, tail 2·1, tarsus 0·55. ♂, 18. 8. 96. Elgeyu (Jackson).

Adult female. Similar to the male, but differs in having the upper throat

white mottled on the sides with a few blackish spots, and just above the crop is a partially formed black collar, the feathers of which have the base white, a broad black subterminal bar and broad yellow edges. "Iris, bill and legs dark brown." ♀, 18. 12. 00. Katyinwaha (Pease).

Immature. Differs in the pale portions of the head and the throat being buff and the black markings being confined to the lower throat and forming a partial collar. ♀, 31. 1. 97. Sheikh (Lort Phillips).

Fischer's Streaky-backed Canary inhabits Eastern Africa between 4° S. lat. and 10° N. lat.

The species was discovered by Fischer, who collected specimens on the Wembere flats to the south of Speke's Gulf, and near the adjacent coast of Victoria Nyanza at Kagehi and in the Shasha mountains. Mr. Neumann, who has shot several specimens in north-western Masailand, at Scero and Goilale, remarks that: Dr. Reichenow's original descriptions were taken from a female and immature male. Mr. Jackson has procured a specimen at Elgeyu, a male, which appears to me to be in full adult plumage.

In Somaliland, Dr. Donaldson Smith procured the types of *S. maculicollis*, an apparently adult male and an immature female (the latter has been figured). The type of *S. xantholæma*, also from Somaliland, can, I think, from the description, be nothing else but a bird of this species, probably immature; other specimens have been collected by Mr. Elliot at Hellier and Hersi Barri; by Mr. Lort Phillips on the top of Sheik's Pass; by Mr. Hawker at Sheik Wulfi, Ugiawaji and at Jifa Medir. We may therefore presume that the species is fairly abundant throughout Somaliland, and in southern Abyssinia Mr. Pease has procured examples at Fullfully, Katyinwala and Filwa between 9° and 10° N. lat.

The full plumaged males may be recognised by their having the chin, throat and entire chest uniform bright yellow, with some clear black stripes on the sides of the lower throat.

The adult females have less yellow on the forehead; throat

slightly whiter and with some large black spots, especially on the lower throat. Young birds have the pale parts of the head and the upper throat buff and the black spots confined to a collar.

Serinus butyraceus.

Loxia butyracea, Linn. S. N. i. p. 304 (1766) "*India.*"

Serinus butyraceus, Reichen. Vög. D. O. Afr. p. 197 (1894); Kuschel, J. f. O. 1895, p. 342, *egg;* Neum. J. f. O. 1900, p. 288, *Kilimanjaro, Uganda.*

Crithagra butyracea, Fisch. J. f. O. 1877, pp. 180, 206, 1878, p. 281; 1879, pp. 280, 300, 303, *E. Afr.;* Böhm J. f. O. 1885, p. 42 *Gonda;* Oust. Bull. Ec. Haut. Etud. xxi. art. 10, p. 10 (1886) *Somali;* Emin, J. f. O. 1891, p. 60 *Ugogo;* Reichen. J. f. O. 1892, p. 51, *Mengo.*

Fringilla ictera, Vieill. Enc. Méth. iii. p. 972 (1823) *S. Afr.*

Serinus icterus, Sharpe, Cat. B. M. xii. p. 356 (1888) *Rio Chimba, Damara, Cape Col. Natal, Transvaal, Zambesi, Mombasa, Réunion, Mauritius;* Reichen. J. f. O. 1891, p. 159 *Mrogoro, Tabora;* Shelley, Ibis, 1894, pp. 22 *Zomba;* Butler, Foreign Finches in Confinement, p. 34, pl. 7, fig. 3 (1894); Ridgway, Pr. U. S. Nat. Mus. 1895, p. 518 *Amarante Is.;* Shelley, B. Afr. I. No. 285 (1896); Woodward, Ibis, 1897, p. 411 *Zulu;* Sharpe, *t. c.* p. 514 *Zulu;* Shelley, *t. c.* p. 528 *Fort Hill;* 1898, p. 379 *Mlosa;* 1899, p. 368 *Tanganyika Plateau;* Alexander, *t. c.* p. 565 *Zambesi;* Nehrkorn, Kat. Eiers. p. 110 (1899) *egg;* Grant, Ibis, 1900, p. 135 *S. Abyssinia;* Marshall, *t. c.* p. 289 *Mashona;* Stark, Faun. S. Afr. B. i. p. 173 (1900); Shelley, Ibis, 1901, p. 165 *Palombe.*

Crithagra ictera, Shelley, Ibis, 1888, p. 301 *Tangani, Manda Is.;* Reichen. J. f. O. 1889 p. 284 *Quilimane.*

Crithagra chrysopyga, Swains. B. W. Afr. i. p. 206, pl. 17 (1837) "*Senegal*"*!;* Cab. J. f. O. 1878, pp. 216, 228 *Zanzibar, Kitui;* Reichen. *t. c.* p. 266 *Melinda;* Shelley, P. Z. S. 1881, p. 589 *Usambara, Lamu;* Fisch. J. f. O. 1885, p. 136 *Bagamoio* to *Wapokomo;* Sousa, Jorn. Lisb. 1887, p. 101 *Quissange;* Hartert in Ansorge's Under Afr. Sun, p. 347 (1899) *Masinde, Unioro.*

Fringilla (Dryospiza) aurifrons, Heugl. Syst. Uebers. p. 41 (1856) *Dokah.*

Crithagra barbata, Heugl. J. f. O. 1864, p. 248 *Djur;* id. Orn. N. O. Afr. p. 649, pl. 19, fig. 5 (1870); Shelley, P. Z. S. 1882, p. 37 *Tobbo;* Emin, 1891, p. 60 *Ugogo;* Hartl. Abhandl. nat. Ver. Bremen, 1891, p. 25 *Usambiro.*

Serinus barbatus, Jackson, Ibis, 1899, p. 620 *Ntebi*.
Serinus flavifrons, Pr. Würth. Heugl. J. f. O. 1867, p. 297 *Fazogl*.
Crithagra mosambicus, Peters, J. f. O. 1868, p. 134 *Mosambique*.

Adult. Above, olive green streaked with blackish centres to the feathers of the crown and mantle; forehead, a broad eyebrow, lower back and edges to upper tail-coverts bright canary yellow. Wing mostly brownish black; least-coverts olive like the back; median and greater-coverts, as well as the inner secondaries, broadly edged with dull yellow; primary-coverts and the remainder of the quills narrowly edged with that colour; inner edges of the quills and the under-coverts whitish ash, the latter strongly washed with yellow. Tail brownish black with yellowish white edges, very much broader at the ends of the feathers where they form a well marked terminal band. Sides of head yellow with the ear-coverts dusky green and a patch in front of the eye and a well-marked mustachial band jet black; chin, throat, breast and the under tail-coverts uniform canary yellow shading into olive on the sides of the neck and breast. Iris brown; bill dusky horn colour; tarsi and feet brown. Total length 4·2 inches, culmen 0·3, wing 2·7, tail 1·8, tarsus 0·55. ♂, 20. 10. 75. Pinetown (T. L. Ayres).

Adult female. Similar to the male but often with the chin white, and is very slightly smaller.

Immature. Upper parts browner; forehead and eyebrow yellowish white; ear-coverts and sides of neck ashy brown; mustachial band dusky brown; under parts paler yellow fading into white towards the chin; some dusky spots on the throat and front of the chest. ♀, 28. 7. 81. Rustenburg (W. Lucas).

The Common Yellow-fronted Canary ranges over the whole of South and East Africa, south of the Quanza river on the west, and 15° N. lat. in Eastern Africa.

This species has been well described by Linnæus as *Loxia butyracea*, nominally from an Indian specimen, but really procured in the Ethiopian Region and probably at the Cape of Good Hope, where in those days a vessel from India was sure to stop on her way to Europe. Probably a ship from the Cape which touched at some port on the Senegambian coast brought from South Africa the type of Swainson's *Crithagra chrysopyga*, for his short description and figure of that bird agrees well with the present species and not with the allied West African form. The type of *Fringilla ictera*, Vieill., also came from South Africa.

In Benguela, Anchieta procured a specimen at the Rio Chimba, which is in the British Museum, and he informs us that the species is known to the natives at Biballa as the "Kianja" and at Caconda as the "Kabilo" and he also procured the species at Quissange.

These Canaries are common and very evenly distributed throughout the whole of South Africa and the greater portion of Tropical East Africa. According to Stark: "In its habits it is lively and excitable, but at the same time tame and confiding. In the spring of the year the cock is much given to chasing the hens, as well as intruding males of his own species, when not uttering his melodious song of seven flute-like notes, from the top of a bush. During the winter months these seed-eaters collect in small flocks and frequent open ground and stubble-fields in search of small seeds which they habitually eat. They frequently feed along with other Finches and Waxbills. In summer they vary their diet with small beetles, caterpillars, and other insects, and I have even seen individual birds taking flies on the wing. They are fond, also, of sipping the nectar from the blossoms of certain creepers that are much frequented by Sunbirds. Owing to its pretty plumage, its gay and lively disposition, and its charming song, this species is frequently caught and caged, and is even exported to Europe as a cage-bird. The nest, a neat and pretty cup-shaped structure, is built in a low bush, in September or October, of dry stalks of grass and flowers, lined with finer grass and cotton down. From three to five eggs are laid, of a pale bluish ground colour, sparingly spotted towards the larger end with pale reddish brown. They measure 0·68 × 0·52. The female sits for twelve or thirteen days, and the young remain in the nest for about twenty-four days. They are fed on insects, and are at first covered with yellowish white down."

According to Mr. Boyd Alexander the species is common

along the Zambesi river, where it was found by him in small flocks. In Mosambique, Peters collected the types of his *Crithagra mosambicus* and a totally different bird, *Crithagra crassirostris*, Peters, which has been sometimes wrongly referred to this species; but as I remarked in 1895, it possibly is the oldest name for *Crithagra rendalli*, Tristram, which is really a Weaver-bird belonging to the subfamily *Viduinæ*, and might be placed in my List of the Birds of Africa between *Pyromelana* and *Quelea* in a new genus, for which I have proposed the name of *Anomalospiza*.

Now to resume the history of *Serinus butyraceus*, from which I have diverged. It has been procured by Dr. Stuhlmann at Quilemane; in the neighbourhood of Lake Nyasa specimens have been collected by Mr. Alexander Whyte at Fort Hill and Mlosa, and by Col. Manning on the Tanganyika plateau near the boundary of British Central Africa and German East Africa; in Central Africa Böhn procured the species at Gonda, Emin in Ugogo and in the country of the Upper White Nile, at Fadjuli and Tobbo and in the latter district he found these Finches abundant, frequenting the thickly leaved sycamore trees. Fischer met with the species throughout East Africa from Mosambique to Wapocomoland on the north side of the Tana river. He took a nest of the species at Wasso in April, which was built on an acacia tree about five feet from the ground, and he also informs us that it is called in the Lamu district "Kinanga-nangu," and in South Gallaland, "Tscheriko." Mr. Jackson procured specimens at Tangani, on Manda Island, and at Ntebi near the north-east end of Victoria Nyanza. Mr. Neumann met with the species at Kilimanjaro and in Uganda, and Dr. Ansorge in Unioro. In Somaliland it has been found by M. Révoil, and according to Lord Lovat it frequents the valleys of South and Central Abyssinia. Heuglin procured the type of his *Crithagra barbata*

1. Serinus hartlaubi. ad. & juv.
2. " albifrons.

at Djur and found these Finches abundant in the wooded country westward from the Gazelle river to Kosanga, where they were breeding in March and had young ones able to fly by the end of April. The types of both *Fringilla aurifrons*, Heugl. and *Serinus flavifrons*, Pr. Württ. came from Abyssinia, the former from Dokah, and the latter from Fazogl. As neither Dr. Blanford nor Mr. Jesse met with the species, it is probably very rare in northern Abyssinia, and its range hardly extends to 15° N. lat.

I have called this and the next species Yellow-fronted Canaries, because Lathan, in 1783, christened them Yellow-fronted Grosbeaks.

Serinus hartlaubi. (Pl. 25, fig. 1.)

Crithagra hartlaubi, Bolle, J. f. O. 1858, p. 355 *W. Afr.*
Crithagra chrysopogon (nec Swains.) Gordon, Contr. Orn. 1849, p. 9 *Gold Coast.*
Crithagra chrysopyga (nec Swains.) Reichen. J. f. O. 1887, pp. 301, 308 *Manyanga, Kasongo;* Rendall, Ibis, 1892, p. 219 *Gambia.*
Crithagra butyracea (nec Linn.) Reichen. J. f. O. 1875, p. 42 *Abokobi.*
Serinus butyraceus, Reichen. J. f. O. 1891, p. 390 *Togo;* 1897, p. 41 *Togo;* Hartert, Nov. Zool. 1899, p. 414 *Gambaga.*
Serinus icterus (nec Vieill.) Sharpe, Cat. B. M. xii. p. 356 (1888) pt. *W. Afr.;* Reichen. J. f. O. 1896, p. 35 *Camaroons;* Budgett, Ibis, 1891, p. 490 *Gambia;* Alexander, Ibis, 1902, p. 297 *Gambaga.*
Serinus punctigula, Reichen, Orn. Monatsb. 1898, p. 23 *Camaroons.*

Adult male. Forehead, eyebrows, cheeks, chin, throat, under surface of body, under tail-coverts and the rump pale canary yellow; remainder of the head and a band down the sides of the upper throat deep leaden grey; some dark centres to the feathers of the crown; mantle yellowish olive partially mottled with dark shaft-stripes to the feathers; upper tail-coverts and tail blackish brown, the former broadly edged with bright yellow and the feathers of the latter narrowly so with yellowish buff fading into white at the ends. Wing blackish brown, the feathers with olive tinted yellow edges, broadest and palest at the ends of the median and greater coverts; under surface of wing dusky, fading into white on the inner edges of the quills and the coverts, the latter tinted with yellow, especially towards the bend of the wing. Iris brown; bill horny brown; tarsi and feet dusky. Total length 4·2 inches, wing 2·55, tail 1·8, tarsus 0·6. ♂, 1. 1. 1. Gambaga (Alexander).

The Senegal Yellow-fronted Canary ranges over West Africa generally between the Senegal and Quanza rivers.

This species has been very generally confounded with its near ally the common Yellow-fronted Canary, which replaces it in South and East Africa. It is distinguished from that bird by the grey colouring of the crown in adult males, the narrower dark stripes on the mantle, and the tail having little or no white ends to the feathers.

Swainson received the type of his *Crithagra chrysopyga* from Senegal, but from the description and illustration of that bird I am led to conclude that the specimen was a South African one, so I reject that name for the present species and in so doing set aside *Crithagra chrysopogon*, Gordon, as it was entered without a description, and was used instead of *C. chrysopyga*, either in error or as a more classical rendering of the same. This brings me to *Crithagra hartlaubi*, Bolle. Dr. Carl Bolle has pointed out the characters of this species and how it differs from the description and figure of *Crithagra chrysopya*, Swains., and his article on this subject (J. f. O. 1858, pp. 353-359) is worth reading.

Marche and De Compiègne met with the species at Bathurst. Here, according to Dr. Rendall, the natives keep many of them in cages and speak of them as Canaries. Verreaux procured specimens from Casamanse, and at Bissao they are so abundant, we are told by Mr. Chelmicki, that he met with flocks of thousands along the rampart walls, yet Mr. Büttikofer does not record the species from Liberia. In the British Museum there are specimens from Ashantee and Elmina. While I was on the Gold Coast with Mr. T. E. Buckley, in February and March, 1872, we found the species abundant at Cape Coast and Accra, usually in large flocks. Ussher procured specimens near the mouth of the Volta river. Inland at Gambaga and Genieri it has been met with by

Captain W. Gifford and Captain Boyd Alexander, and in Togoland by Dr. Büttner. From Abeokuta there is a specimen which was sent to the British Museum in spirits, which has had the effect of turning all the yellow parts white, but has not much altered the other colours. Mr. Hartert tells us that the species is known at Lagos as the African Canary, and when he was in the Niger district at Loko in July he was struck with the beauty of its song. In Camaroons Mr. Zenker procured the type of *S. punctigula*, Reichen., on the grass-lands of the Sanaga district. This specimen, which I have examined, is an immature bird of the present species with a few blackish spots on the middle throat. I do not find the species recorded from either Gaboon or Angola, but specimens have been collected by Lucan and Petit on the Loango Coast, and by Bohndorff up the Congo river at Manyanga and Kasongo.

Serinus flaviventris.

Crithagra flaviventris, Swains. Zool. Journ. iii. p. 348 (1828) *S. Afr.*
Serinus flaviventris, Sharpe, Cat. B. M. xii. p. 353 (1888) *Cape Col.*; Kuschel, J. f. O. 1895, p. 342 *egg*; Shelley, B. Afr. I. No. 283 (1896); Nehrkorn, Kat. Eiers. p. 110 (1899) *egg*; Stark, Faun. S. Afr. B. i. p. 170 (1900).
? Fringilla butyracea, Linn. S. N. i. p. 321 (1766) *Madeira.*
Crithagra strigilata, Swains. Ann. in Menag. p. 317 (1837, ♀) *S. Afr.*
Crithagra flava, Swains. *t. c.* p. 318 (1837, ♂) *S. Afr.*

Adult male. Upper parts yellowish green with dusky shaft-stripes to the feathers of the crown and mantle, and a wash of yellow on the lower back; forehead and a broad complete eyebrow bright yellow. Wings and tail brownish black with yellowish green edges to the feathers; lesser coverts like the mantle; under coverts and inner edges of the quills brownish white, the former strongly washed with yellow. Sides of the head below the eyebrow and a band from the lores down the side of the upper throat greenish, with the greater portion of the cheeks canary yellow like the chin, throat, breast, thighs and under tail-coverts. "Iris brown; upper mandible dusky; lower one light brown; tarsi and feet dark brown" (Stark). Total length 5·3 inches, culmen 0·35, wing 2·8, tail 2·2, tarsus 0·7. Cape Col. (Smith).

Adult female. Very different. Yellow confined to a wash of that colour on the edges of the feathers; upper parts ashy brown with blackish shaft-stripes; rump and upper tail-coverts rather strongly washed with yellow and the pale edges to wing and tail feathers tinted with that colour; side of forehead, a broad eyebrow and most of the cheeks buffy white; remainder of sides of head uniform ashy brown, under parts whitish, thickly streaked with dark brown on the chest, sides of body and under tail-coverts, and spotted with that colour on the throat. Total lengh 4·9 inches, culmen 0·4, wing 2·7, tail 2, tarsus 0·75. ♀, 23. 1. 74. Stellendorf (Shelley).

Swainson's Canary is apparently confined to Cape Colony. This species is a local representative of the very nearly allied wider ranging *S. marshalli*. The "Kleine Seisje," as this bird is called by the Dutch Colonists, is, Stark informs us, not such a favourite cage-bird as the Cape Canary, but has by no means a despicable song, many of its notes being exceedingly true and sweet. He further remarks: "In the neighbourhood of Saldanha Bay, where it is, together with the large *S. albigularis*, abundant among the bushes that overgrow the sandhills at the back of the beach, it breeds in September. A nest found on the 30th of this month, with five fresh eggs, was placed in the top of a low bush about fifteen inches off the ground. It was slightly but neatly constructed of small twigs and dry grass-bents, and was thickly lined with cotton seeds of a bush that grew not far off. The eggs are of a faint bluish green ground colour, sparsely zoned and marked at the large end with small spots of dark and light reddish brown. They measure 0·70 × 0·52."

Serinus marshalli, sp. nov.

Serinus imberbis (nec Cab.) Sharpe, Cat. B. M. xii. p. 355 (1888 pt.) *Damara, Gt. Namaqua, Transvaal;* Stark, Faun. S. Afr. B. i. p. 172 (1900).

Crithagra flaviventris (nec Swains.) Fleck, J. f. O. 1894, p. 410 *Damara.*

Serinus flaviventris, Butler, Foreign Finches in Captivity, p. 31, pl. 7 (1894); Marshall, Ibis, 1900, p. 239 *Mashona.*

Adult male. Extremely similar to *S. flaviventris* but with the bill slightly larger and the upper parts yellower, the crown and mantle being greenish yellow and the lower back almost pure yellow. Total length 5·2 inches, culmen 0·4, wing 2·9, tail 2·3, tarsus 0·7. ♂, 20. 1. 85. Potchefstroom (T. Ayres).

Adult female. Similar to that of *S. flaviventris* but paler, and with the under parts less strongly streaked. Sides of forehead, a broad eyebrow and most of the cheek buffy white, remainder of the head ashy brown; under parts whitish, tinted with brown on the crop, where there are a few dusky shaft-stripes; sides of body slightly washed with yellow and streaked with brown. Total length 5·1 inches, culmen 0·35, wing 2·8, tail 2·2, tarsus 0·6. ♀, 19. 6. 52. Koij's fountain (Andersson).

Marshall's Canary inhabits the island of St. Helena and South Africa from Benguela and Mashona to the Orange river.

These birds, as well as *S. flaviventris*, are known to the dealers in cage-birds as the St. Helena Canary, and the name is justified by their being more commonly captured on that island than elsewhere.

They show a marked affinity to *S. flaviventris* in the plumage of the females being totally different to that of the adult males, which character is not known to occur in any other member of the genus to anything like the same extent. This indicates that their nearest ally is *S. flaviventris*, and not the remarkably similar bird *S. imberbis*, which latter belongs to the *S. sulphuratus* group in which the sexes are alike in plumage.

To account for this, I would suggest that they may be the descendants of a pair of *S. flaviventris* imported from the Cape of Good Hope to St. Helena, where the different conditions of climate, food, &c., have had the effect of producing the slight differences which distinguish *S. marshalli* from *S. flaviventris*. Being extremely good songsters, they would be imported to S. Africa as readily as they are to Europe, but in the former country they would naturally become easily acclimatised and

might be kept beyond the borders of Cape Colony by the conservative feeling of the original race, so I consider we should not be justified in stating that *S. marshalli* inhabits S. Africa and is met with in *St. Helena* only as an introduced species.

On St. Helena it is, according to Mr. Mellis (Ibis, 1870, p. 101), next to *Estrilda astrild*, the most abundant land-bird on the island, and he remarks: "It is to be regretted that its numbers are diminishing, very probably owing to the trade carried on in them between the natives and the shipping. The note of this bird is less shrill and much sweeter than that of the real Canary; perched on the branch of a tree, it will, on a summer's morning, sing unceasingly for hours." It associates with other Finches, and is particularly fond of fruit, ripe peaches especially.

In Benguela these Canaries have been met with by Anchieta at Huilla, and in German South-western Africa they are rare according to Mr. Fleck, who found them perched upon bushes near the mountain streams. In the British Museum there are specimens from Damaraland, Great Namaqualand, the Transvaal, Matabeleland and Mashonaland. I do not find either this species or *S. flaviventris* recorded from Natal or Zululand, but according to Mr. T. Ayres the present species is abundant at Potchefstroom, breeding there amongst the hedge-rows in September, and Mr. Guy Marshall calls them common in Mashonaland, where they congregate in flocks during the early winter.

I have named the species after my friend Mr. Guy A. K. Marshall, who has done much good work in Mashonaland.

Serinus imberbis.

Crithagra imberbis, Cab. J. f. O. 1868, p. 412 note, *Zanzibar;* Fisch. J. f. O. 1885, p. 136 *Zanzibar;* Reichen. J. f. O. 1887, pp. 42, 72 *Ugaia.*

Serinus imberbis, Sharpe, Cat. B. M. xii. p. 355 (1888 pt.) *Zambesi and E. Afr.;* Shelley, Ibis, 1894, p. 22 *Zomba;* Reichen. Vög. D. O. Afr. p. 197 (1894) *Kakoma;* Shelley, B. Afr. I. No. 284 (1896); Neum. J. f. O. 1900, p. 289 *Usoga.*

Crithagra chloropsis (nec Bp.) Cab. in Decken's Reis. iii. p. 30, pl. 9 (1869) *Zanzibar.*

Serinus flaviventris (nec Swains.) Reichen. J. f. O. 1892, p. 51 *Bukoba;* id. Vög. D. O. Afr. p. 196 (1894) *Karagwe;* Hartert in Ansorge's Under Afr. Sun, p. 347 (1899) *Unyoro, Uganda.*

Serinus sharpii, Neum. J. f. O. 1900, p. 287 *Kilimanjaro.*

Adult male. Intermediate between *S. sulphuratus* and *S. marshalli*, resembling the former in the plumage of the sexes being similar, and the yellow sides of the forehead not meeting. It differs from *S. sulphuratus* and agrees well with *S. marshalli* in the greater amount of yellow on the upper and underparts.

Above, olive yellow with faintly marked dusky shaft-stripes to the feathers of the crown and mantle; lower back and upper tail-coverts uniform, the former inclining to bright yellow. Tail blackish brown, with narrow, rather dull yellow edges. Wing blackish brown, the lesser coverts like the mantle, and the other feathers edged with the same shade of yellow as the lower back. Sides of head and neck mostly uniform olive yellow, with the sides of the forehead, eyebrow, and patches on the front and back of the cheeks bright canary yellow like the chin, throat, breast, thighs and under tail-coverts; crop very faintly tinged with olive. Iris brown, bill yellowish, slightly browner above, tarsi and feet brown. Total length 5·2 inches, culmen 0·45, wing 3, tail 2·2, tarsus 0·65. ♂, 26. 4. 97; ♀, 19. 4. 97. Masindi (Ansorge).

Adult female. Slightly duller; mantle more streaked, less yellow on the head, crop rather more olive; flanks with a few obscure dusky streaks.

Decken's Canary ranges over Eastern Africa from the Zambesi river into the Uganda country.

It apparently replaces *S. marshalli* at the Zambesi and northward, for in the British Museum there are two full-plumaged specimens, procured by Sir John Kirk at Tete, and three others by Mr. Whyte at Zomba and Tchiroma in the

Upper Shirè district. Böhm records the species as plentiful near Kakoma, in flocks with other Finches in the rice-fields, or perched on boughs to sing. The type of the species was discovered by the late Baron von der Decken at Zanzibar. Fischer collected specimens there and in Ugeyeya, and Mr. Oscar Neumann obtained the type of his *S. sharpei* in the intervening country on Kilimanjaro. The latter naturalist met with specimens he refers to *S. imberbis* at Kwa Lubwa in Usogo, and I cannot see in his description of the type of *S. sharpei* any character for distinguishing it from the birds collected by Dr. Ansorge in Unioro and Uganda, which agree perfectly with specimens from Tete and Nyasaland. Emin has obtained the species at Bukoba.

Serinus sulphuratus.

Loxia sulphurata, Linn. S. N. i. p. 305 (1766) *Cape.*

Serinus sulphuratus, Sharpe, Cat. B. M. xii. p. 352 (1888); Reichen. J. f. O. 1891, p. 158 *Ugogo;* Büttik. Notes, Leyd. Mus. 1888, p. 240 *Humpata;* Reichen. Vög. D. O. Afr. p. 196 (1894); Butler, Foreign Finches in Captivity, p. 29, pl. 6, fig. 2 (1894); Fleck, J. f. O. 1895, p. 341 *egg;* Shelley, B. Afr. I. No. 282 (1896); Sharpe, Ibis, 1897, p. 514 *Zulu;* Nehrkorn, Kat. Eiers, p. 110 (1899) *egg;* Jackson, Ibis, 1899, p. 620 *Ravine, Naiwasha;* Starke, Faun. S. Afr. B. i. p. 169 (1900).

Crithagra sulphuratus, Fisch. J. f. O. 1885, p. 136 *Naiwasha;* Reichen. J. f. O. 1887, p. 72 *Salanda.*

Brimstone Grosbeak, Lath. Gen. Syn. iii. p. 137 (1783).

Adult. Above yellowish green streaked with brownish black centres on the feathers of the crown and mantle. Tail and wings brownish black with olive yellow edges to the feathers, broadest on the inner secondaries, greater coverts, ends of the median coverts and the lesser coverts, which latter are like the mantle; under surface of quills with brownish buff inner edges; under coverts ashy, strongly washed with bright yellow. Sides of forehead, a broad eyebrow and patches on the front and back of the cheeks canary yellow, like the chin and upper throat; remainder of the sides of the head uniform olive green, like the back of the neck; breast and under tail-coverts bright yellow like the upper throat, but shading into olive yellow on the

crop and flanks. "Iris brown; bill pale horn brown; lower mandible dusky horn white; feet brown." Total length 5·8 inches, culmen 0·5, wing 3·25 and 3·1, tail 2·5, tarsus, 0·7. ♂, ♀, 23. 7. 97. Ravine (Jackson)=22. 7. 65. Table mountain (Andersson).

The Brimstone Canary ranges over South Africa generally and northward to Mossamedes in Western Africa and to the Equator on the east side of the continent.

Mr. Büttikofer records two specimens of this species as having been procured by Mr. Van der Kellen at Humpate in the Upper Cunene district in February, 1885, which much extends the range of this species on the west coast of Africa, for it was not previously known from north of the Orange river on this side. When I visited South Africa in 1874, I found these Canaries common in the pine forests near Capetown. They appear to be very evenly distributed over the colony and are known to the Dutch as the "Geel Saysie." "It is," Stark wrote, "rather common in many parts of Cape Colony, both on open pasture land and in bushy localities. In winter these birds form considerable flocks, often joining with other Finches to search for seeds on the ground. The principal part of their food, however, consists of small berries and their seeds; the latter they crack with their powerful bills for the sake of the kernels. In spring the males sing delightfully, their notes being both powerful and mellow; for this reason they are frequently kept as cage-birds and even exported to Europe. The nest, usually built in September in Cape Colony, is a small and neat cup-shaped structure, and is nearly always placed in a low bush, rarely more than four feet above the ground. It is constructed outwardly of dry grass-stems and cottony down. The eggs, generally four in number, are either white or white faintly tinged with blue; about one half of them are unspotted, the remaining half have a few deep black spots, or one or two zig-zag markings towards the larger end. They are usually

somewhat elongated and tapering towards the smaller extremity. They average 0·85 × 0·60.

"Incubation lasts for fourteen days, and the young remain in the nest for from three to four weeks. During this period they are fed on insects and on the contents of the crops of the parent birds."

In Zululand the Messrs. Woodward procured the species at Eschowe and Mr. T. Ayres shot specimens in Natal and the Transvaal, and from the latter colony in the Lydenberg district wrote: "This bird I found in the woods in the ravines of the mountains often busy feeding about the upper twigs and foliage of the trees and shrubs."

In East Africa specimens have been collected by Fischer at Matangisi in Ugogo, at Salanda on Victoria Nyanza and as far north as Naiwasha lake. In this latter district specimens have also been procured by Mr. Jackson at this lake and in the mountains at Ravine, where he records the species as scarce, but collected five males and three females in March, July and August. Lord Delamere shot a male at lake Nakuro on the first day of this century and it is now in the British Museum.

I fail to see any character for distinguishing the East African Equatorial specimens from the Cape Colony birds, and the description I have taken from a male and female shot by Mr. Jackson at Ravine agree to a nicety with those from South Africa, including one of Andersson's from Cape Town, and on the label of one of the East African specimens in the British Museum is written *S. sharpii* in, I believe, Mr. Oscar Neumann's hand-writing. It may, however, appear strange that from the country between the Limpopo river and Ugogo the species has not yet been recorded; but this tract of country, like Angola, are the portions of Africa which have been least explored scientifically. As a cage-bird the species requires the same treatment as *S. canicollis*.

Serinus donaldsoni.

Serinus donaldsoni, Sharpe, Bull. B. O. C. iv. p. 41 (1895); id. P. Z. S. 1895, p. 470, pl. 27, fig. 2 *Somali;* Shelley, B. Afr. I. No. 288 (1896).

Male. Similar in size and colouring to *S. sulphuratus*, but may be readily distinguished by the rump being strongly washed with bright yellow and the throat, breast and under tail-coverts clear bright yellow with no olive shade; it is further characterised in having the feathers of the abdomen mostly white and some broad dusky olive stripes on the flanks. "Iris dark brown; bill flesh colour. Total length 6·1 inches, culmen 0·55, wing 3·25, tail 2·7, tarsus 0·65. ♂, 10. 9. 94. Darde R. (Donaldson Smith).

Donaldson's Canary inhabits Somaliland.

This species was discovered by Dr. Donaldson Smith in Somaliland, and is known to me by the type which was shot at the Darde river, September 10, 1894, and another male killed the same day at Kalolo, both of which are in the British Museum.

Serinus socotranus.

Rhynchostruthus socotranus, Sclater and Hartl. P. Z. S. 1881, p. 171, pl. 17 *Socotra Is.;* Sharpe, Cat. B. M. xii. p. 282 (1888); Shelley, B. Afr. I. No. 251 (1896).

Rhynchostruthus riebecki, Hartl. P. Z. S. 1881, p. 954, pl. 72 *Socotra Is.*

Adult male. Head, upper neck and throat black with the ear-coverts white; back and scapulars uniform brown shaded with ashy grey towards the lower back and upper tail-coverts. Wing blackish brown and bright yellow; the lesser wing-coverts washed at the edges with yellow, the greater coverts and the secondaries with very broad pale yellow outer edges, forming two thick oblique bars on the closed wing; the inner greater coverts and inner secondaries with broad ashy grey edges; under surface of quills dusky brown with obsolete pale inner margins, and the under wing-coverts whitish ash partially washed with pale yellow. The black throat ends in a curve surrounded by the uniform pale ashy brown of the sides of the neck, crop and breast, which latter fades into white on the lower abdomen and under tail-coverts. Tail blackish brown with bright yellow outer edges to the feathers, broadest at the base but reaching nearly to their ends. "Iris brown; bill black; tarsi and feet flesh colour." Total length 6 inches,

culmen 0·65, wing 3·5, tail 2·3, tarsus 0·75. ♂, 12. 2. 99 (Grant and Forbes).

Adult female. Differs only in the crown and nape being browner, and the throat fading into tawny brown on the lower half. ♀, 10. 2. 99. (Grant and Forbes).

Immature. Differs in the forehead and crown being like the back, brown with dusky brown centres to the feathers; wings and tail as in adults; sides of head dusky blackish towards the bill; ear-coverts uniform brownish buff; throat brownish buff, with dark brown streaks; breast and under tail-coverts white, the chest and sides of body strongly striped, with dark brown centres to the feathers.

The Socotra Golden-winged Canary is a native of the island of Socotra.

This species was discovered by Prof. J. B. Balfour, who found them "on the shrubs in the Goehel valley, feeding on seeds of a species of Croton;" and collected four immature males, one of which has been well figured, and differs greatly from the adult which has been figured and described under the name of *R. riebecki*, after Dr. Riebeck, who procured a pair in full plumage at Karegnigi, April 28, 1881, about one month after the species had first been discovered.

Serinus louisæ.

Rhynchostruthus louisæ, Lort Phillips, Bull. B. O. C. vi. p. 47 (1897) *Somali;* id. Ibis, 1898, p. 398, pl. 8.

Adults. Very similar in plumage to *R. socotrana*, but differ in the colouring of the head and throat. Forehead and crown brown like the mantle; front half of sides of head, the chin and upper throat black; ear-coverts and sides and front of neck ashy brown, or stone colour, like the breast. Length 4·9 inches, culmen 0·5, wing 2·9, tail 1·7, tarsus 0·65. Type, ♀, 31. 1. 97. Somali (L. Phillips).

Immature like that of *R. socotrana*, but with the crown more uniform and the head and neck of a more ashy grey shade.

The Somali Golden-winged Canary inhabits Somaliland.

Mr. Lort Phillips discovered the type, an adult female, at Sheikh, Jan. 31, 1897, and shot an immature male on the

Wagga mountain, about a month later, and these two specimens are well figured in the Ibis.

This finch is apparently nowhere common, for it has been recorded by Mr. Lort Phillips only, who in 1898 wrote: "That so brightly-coloured and conspicuous a bird as this new Finch should have escaped being recorded for so long is indeed remarkable. In 1895, at the foot of the Sheikh Pass, I procured a specimen out of a small flock, but as it was badly shot I gave up the attempt of skinning it and threw it away, thinking that I should see plenty more, but I did not see any during the whole time I was then in the country."

Serinus burtoni.

Strobilophaga burtoni, Gray, Ann. and Mag. N. H. (3) x. p. 444 (1862) *Camaroons.*

Serinus burtoni, Sharpe, Cat. B. M. xii. p. 364. pl. 7 (1888) *Camaroons;* Reichen. J. f. O. 1890, p. 124; Sjöstedt, Svensk. Vet. Ak. Handl. 27, No. 1, p. 93 (1895); Shelley, B. Afr. I. No. 295 (1896).

Crithagra burtoni, Shelley, P. Z. S. 1887, p. 126 *Camaroons.*

Adult. Head, neck and upper parts dark brown, slightly mottled with paler edges to the feathers; forehead white, or mottled with white; some of the median and greater coverts with white ends; quills and tail-feathers narrowly edged with olive yellow; under wing-coverts ashy brown, tinted with rufous, and the axillaries washed with yellow; chin and cheeks mottled with dusky black, and a few whitish edges to the feathers; chest, abdomen and under tail-coverts buff, with broad dark brown shaft-stripes on the sides of the body. Iris, bill and legs brown. Total length 6·4 inches, culmen 0·65, wing 3·5, tail 2·8, tarsus 0·85. Type.

Sexes very similar in plumage.

Burton's Canary inhabits Camaroons.

The type was discovered by Burton in that country, and probably came from the highlands of the interior, for the only other specimens of this rare species yet recorded are two males and a female procured by Sir Harry Johnston in the mountains at a height of 9,000 feet.

Serinus albifrons. (Pl. 25, fig. 2.)

Crithagra albifrons, Sharpe, Ibis, 1891, pp. 118, 255 *Kikuyu, Mt. Elgon.*
Serinus albifrons, Shelley, B. Afr. I. No. 296 (1896); Jackson, Ibis, 1899, p. 621 *Ravine, Nandi;* Hartert, Nov. Zool. 1900, p. 43 *Nairobé;* Neum. J. f. O. 1900, p. 289 *Kikuyu;* Sharpe, Ibis, 1902, 117 *Ravine.*
Crithagra kilimensis, Richmond, Auk. xiv. p. 155 (1897) *Kilimanjaro.*

Adult. Upper parts brown, obscurely mottled with dark centres to the feathers of the crown and mantle. Wing, with the lesser-coverts like the back; remainder washed with olive yellow on the edges of the feathers, and with white terminal edges to the median and greater-coverts forming two narrow bars; under surface of the quills dark brown, slightly paler on the inner edges; axillaries and under-coverts brownish buff strongly washed with chrome yellow. Tail dark brown with partial olive yellow edges to the feathers. Sides of the head and neck dark brown, inclining to black on the front half of the head, the chin, and the upper throat, which parts are rather irregularly mottled with white; breast and the under tail-coverts isabelline, with blackish brown centres to the feathers of the flanks and under tail-coverts. "Iris brown; upper mandible dusky brown; lower mandible white at the base with a dusky tip; tarsi and feet horn brown." Total length 6·3 inches, culmen 0·65, wing, 3·5, tail 2·9, tarsus 0·8. ♂, ♀, 31. 7. 96. Ravine (Jackson).

Immature, type. Generally slightly more rufous; forehead buffy white, and a few of the feathers of the crown edged with that colour; pale ends to the median and greater wing-coverts rufous buff. Total length 6·3 inches, culmen 0·55, wing 3·5, tail 2·8, tarsus 0·75. ♂, 25. 2. 90. Mt. Elgon (Jackson).

Jackson's Brown Canary inhabits eastern Tropical Africa.

The most southern range known to me for this species, is the Kilimanjaro mountain, and its most northern is Mount Elgon. On Kilimanjaro Dr. W. L. Abbott procured the type of *Crithagra kilimensis*, Richmond, at an elevation of 6,000 feet, and another specimen one thousand feet higher up the mountain. Dr. R. B. Sharpe has proved that the type of *Crithagra kilimensis* is a full plumaged male of *Crithagra albifrons*, Sharpe. Mr. Jackson has collected a fine series of both adults and immature specimens at the Eldoma ravine, in Nandi and in the

Kikuyu country, also on Mount Elgon. Besides these, Lord Delamere has procured specimens at Nairobé, Baroma on the Kikuyu escarpment, and at the Nayuki river, which specimens are now in the British Museum.

Serinus striolatus.

Pyrrhula striolata, Rüpp. N. Wirb. Vög. p. 99, pl. 37, fig. 1 (1835) *Abyssinia.*

Serinus striolatus, Sharpe, Cat. B. M. xii. p. 363 (1888) *Kilimanjaro, Abyssinia;* Salvad. Ann. Mus. Genov. 1888, p. 271 *Shoa;* Shelley, P. Z. S. 1889, p. 367 *Kilimanjaro;* Sharpe, Ibis, 1891, p. 258 *Kikuyu, Mt. Elgon;* Shelley, B. Afr. I. No. 294 (1896); Grant, Ibis, 1900, p. 135 *S. Abyssinia;* Neum. J. f. O. 1900, p. 289 *Kilimanjaro.*

Crithagra striolata, Fisch. J. f. O. 1885, p. 136 *Arusha.*

Poliospiza striolata, Reichen. Vög. D. O. Afr. p. 196 (1894) *Arusha, Kilimanjaro.*

Crithagra striolata affinis, Richmond, Auk. xiv. p. 157 (1897) *Kilimanjaro.*

Serinus affinis, Jackson, Ibis, 1899, p. 620 *Ravine, Nandi, Kikuyu;* Hinde, Ibis, 1900, p. 494 *N'gong.*

Adult. Above mottled brown, the broad centres to the feathers inclining to black and the pale edges partially fade into buff down the centre of the crown and on the hind neck. Wing: lesser-coverts like the back; median and greater-coverts as well as the inner secondaries with fairly broad terminal edges of brownish white; outer edges of the greater-coverts, primary-coverts and the remainder of the quills have partial olive yellow edges, the remaining portion of the wing being blackish brown, with buff inner edges to the quills, and the axillaries and under wing-coverts isabelline buff with a slight yellow shade on the pinion. Tail blackish brown with narrow olive yellow edges to the feathers. Sides of head dark brown, surmounted by a broad eyebrow from the nostril of yellowish buff and a less sharply defined band of the same colour extends from the gape to the sides of the neck and defines a broad dark brown mustachial band which borders the upper half of the throat. Under parts isabelline buff, with the lower throat, sides of body and the under tail-coverts streaked with brownish black centres to the feathers; outside of thighs brown. "Iris brown; bill brown with the lower mandible dusky white; tarsi and feet brown" (Jackson). Total length 6·2 and 5·0 inches, culmen 0·5, wing 2·9 and 2·6, tail 2·4, tarsus 0·75. ♂, ♀, Senafé (Jesse and Blanford).

The Streaky Brown-Canary ranges over Eastern Africa between 3° S. lat. and 15° N. lat.

The most southern range known to me for this species is Great Arusha, where Fischer procured a pair in July. In the Masai district it is abundant, and as these specimens do not differ in any way from North Abyssinian birds it was unnecessary to call those collected by Dr. Abbott on the Kilimanjaro mountain *Crithagra striolata affinis*. Besides the specimens from Kilimanjaro, procured by Mr. Hunter and Sir Harry Johnston, I have examined about a dozen others in the collection of Mr. Jackson, who remarks: "Not nearly so plentiful at Nandi as might have been expected, since the elevation and character of the country are so similar to those of Ravine, where the bird is so common." In Kikuyu, on January 31, 1897, he found a nest placed in a bush three feet from the ground, and on Mount Elgon shot a specimen at an elevation of 11,000 feet. Dr. Hinde, while stationed at N'gong in Masailand, found these Finches very common.

The species has not been recorded from Somaliland, but ranges over Abyssinia generally. In the southern part of that dominion Lord Lovat shot a specimen at Gedda, and Antinori records it as common throughout the year, near Mahal-Uonz, where its note, a "*zi-zi*," is frequently heard near the dwellings. He also procured specimens at Denz, and Dr. Ragazzi shot others at Siotalit, Antoto and Let-Marefia.

Rüppell discovered the type in the more central part of Abyssinia, and according to Heuglin it is not rare in this country to as far north as Bogosland, and ascends the mountains to a height of 11,000 feet. Dr. Blanford writes: "This is not a very common bird, and it was only observed on the higher levels, usually solitary but occasionally in flocks. I met with it above 9,000 feet." He procured the species at the Alagi Pass to the south of Antato and at Senafé, which are the most northern localities yet recorded for this Finch.

Serinus whytei.

Serinus whytei, Shelley, Ibis, 1897, p. 528, pl. 11 *Nyika plateau.*

Type. Upper parts blackish brown with paler brown edges to the feathers; the pale edges of the feathers of the crown and hind neck paler and yellower than on the back and wing-coverts; quills and tail-feathers edged with yellow; sides of head dark olive brown, surmounted by a broad, well-marked sulphur yellow eyebrow; throat uniform sulphur yellow, shaded with dusky brown towards the chin; crop and body yellowish buff with black shaft-stripes, broad and very distinct on the front and sides of the body, and narrow on the under tail-coverts; thighs and centre of abdomen uniform; under wing-coverts yellowish buff; quills slaty brown beneath, with pale inner margins. Bill horn colour; legs brown. Total length 6 inches, culmen 0·55, wing 2·8, tail 2·75, tarsus 0·85. Nyika plateau, June (Whyte).

Whyte's Canary inhabits the Nyika plateau to the west of Lake Nyasa in about 10° S. lat.

The type, a female, was discovered by Mr. Alexander Whyte on the Nyika plateau, June, 1896, and this is all we really know regarding the species, which is possibly a very local form. The so-called Nyika plateau is the elevated district to the west of the northern portion of Lake Nyasa, and has a mean elevation of probably about 6,000 feet, the highest point of the range, called "Centre Peak," being nearly 8,000 feet high. Mr. Whyte, on reaching this plateau, was struck by the remarkably sudden change in the climate and flora. Hitherto he had not found it disagreeably cold, and until reaching the plateau there was little or no sign of an Alpine flora. At his last camp, about 1,000 feet below, the temperature stood at 72° Fahr. in the shade at noon, and here it stood at 60° Fahr.

Serinus alario.

Fringilla alario, Linn. S. N. I. p. 319 (1766) *Cape.*

Alaris alario, Sharpe, Cat. B. M. xii. p. 346 (1888) *Table Mountain, Great Namaqua, Zambesi;* Butler, Foreign Finches in Captivity, p. 41, pl. 8, ♂, ♀, 1894; Shelley, B. Afr. I. No. 279 (1896); Stark, Faun. S. Afr. B. i. p. 179 (1900).

Loxia bouvreuil, P. L. S. Müll. S. N. Suppl. p. 154 (1770).
Crithagra ruficauda, Swains. Ann. in Menag. p. 317 (1837) *S. Afr.*
Crithagra bistrigata, Swains. *t. c.* p. 318 *S. Afr.*
Spermophila daubentoni, Gray, Gen. B. ii. p. 386 (1849).
Crithagra personata, Licht. Nomencl. Av. p. 47 (1854).
Alario aurantia (nec Gm.) Gurney in Anderss. B. Damara, p. 175 (1872).

Adult male in breeding plumage. Entire head jet black; back of neck, back, scapulars, least series of wing-covert, median and greater coverts (with the exception of the outermost ones), as well as outer margins of inner secondaries uniform cinnamon; upper tail-coverts and the tail-feathers darker and redder, the ends of the latter with black angular shaft-marks, largest on the outer ones. Remainder of the wing, including the entire pinion, primary coverts, primaries and greater portion of the secondaries black; inner portion of the under coverts cinnamon mottled with white and the axillaries nearly white. Chin and throat black, which colour extends in a fork down the sides of the middle chest; sides of the neck and the remainder of the under parts white, partially washed with cinnamon on the sides of the abdomen and the under tail-coverts. Iris brown; bill dark brown; tarsi and feet reddish brown. Total length 4·7 inches, culmen 0·3, wing 2·7, tail 2·0, tarsus 0·6. Cape (Butler).

Adult male in winter plumage. Differs in having the sides of forehead, a broad eyebrow, a patch on the cheek, chin and throat white.

Adult female. With no black on the head or under parts. Upper parts brown with the crown and mantle streaked, of an ashy shade on the forehead and crown, and of a more rufous colour on the mantle and outer webs of the inner secondaries; remainder of the wings blackish with the least series of coverts and the ends of the inner greater coverts uniform cinnamon, of the same shade as the lower back and slightly paler than the upper tail-coverts and tail; the black terminal shaft-marks on the tail-feathers are larger than in the males. Sides of forehead, a broad eyebrow, band beneath the eye, hinder part of cheek, chin and throat white; remainder of the head and neck pale brown; breast and under tail-coverts buff shaded with pale brown on the chest and sides of body. Total length 4·5 inches, culmen 0·3, wing 2·6, tail 1·8, tarsus 0·55.

Young. Similar to the adult female, but differ in the crown, mantle and chest having broad dark shaft-stripes. S. Africa (Layard).

The Mountain Canary inhabits Africa, south from Great Namaqualand and the Zambesi.

Andersson met with this species only in Great Namaqualand, in small flocks, near water. According to Stark it is rather local in its distribution, but found in small flocks near

Cape Town, Malmesbury, Knysna, Port Elizabeth, and elsewhere in the Colony, being perhaps most abundant in the Karroo. They are gentle and confiding in their habits and when feeding allow a very close approach without showing any symptoms of alarm. They are fond of perching on low bushes, but obtain the greater part of their food, consisting of grass and other small seeds, from the ground, where they often intermingle with the flocks of Waxbills and other small Finches. The males frequently utter their low but sweet song from the top of a bush, chiefly in the spring, but according to Dr. Russ it is, in cage birds, continued the whole year. "In confinement this species breeds both with the Cape and the Common Canary. In a wild state it builds a small and neatly constructed cup-shaped nest in a low bush, of dry grass and small stalks, lined with finer grass and the down of plants. The eggs, three to five in number, are pale bluish green, spotted at the large end with several shades of reddish brown. They average 0·68 × 0·50. The young are hatched in eleven days, and remain in the nest for about three weeks. They are fed on partly digested food from the crops of the old birds for some time after they leave the nest. Two broods are reared in the season, the first laying being in November, the second in January."

This Finch is best known to the Dutch colonists as the "Berg-Canarie." It was, according to Mr. Richard: "much prized by the lads in Port Elizabeth, who called it the 'Namaqua': it only appears at long intervals, but in considerable numbers when it does occur; it sings well and becomes very tame." My authority for extending its range in eastern South Africa to the Zambesi rests on a specimen in the British Museum labelled "Zambesi (Meller)." We have no right to doubt the correctness of this locality, and I may here mention that Mr. Distant has kindly shown me a bird of

this species, which was brought to him alive by one of his natives at Pretoria and was kept in a cage for some time.

Serinus leucopygius.

Crithagra leucopygia, Sundev. Œfv. K. Vet. Akad. Förh. Stockh. 1850, p. 127 *Senaar;* Finsch in Heugl. Orn. N. O. Afr. Suppl. p. cxlv. (1871).

Serinus leucopygius, Sharpe, Cat. B. M. xii. p. 366 (1888) *Gambia, Redjaf, Senaar;* Butler, Foreign Finches in Confinement, p. 38, pl. 8, fig. 1 (1894); Kuschel, J. f. O. 1895, p. 342 *egg;* Shelley, B. Afr. I. No. 297 (1896); Nehrkorn, Kat. Eiers. p. 110 (1899) *egg;* Witherby, Ibis, 1901, p. 247 *Khartoum.*

? Fringilla musica, Vieill. N. D. xii. p. 210 (1817) *Senegal.*

Serinus leucopygos, Bp. Consp. i. p. 523 (1850) "*S. Asia.*"

Adult. Upper parts ashy brown with the lower back pure white; forehead, crown, back of neck and the mantle mottled with dark brown centres to the feathers; upper tail-coverts and the tail entirely uniform brown. Wing with the pale edges to the feathers very narrow excepting on the inner secondaries and ends of the greater and median coverts, where they incline to white; under surface with the inner margins of the quills and the coverts ashy white. Sides of the head and neck nearly uniform ashy brown; under parts white, slightly washed or mottled with ashy brown towards the front of the chest; flanks streaked with brown. "Iris hazel; bill horn colour; tarsi and feet flesh-colour." Total length 4 inches, culmen 0·35, wing 2·6, tail 1·5, tarsus 0·5. ♂, 13. 5. 0. White Nile (H. F. Witherby).

The White-rumped Canary ranges from Senegambia into Abyssinia, and up the White Nile to Redjaf in about 4° N. lat. In West Africa the species is known to me from Senegambia only, where it is apparently not uncommon. Dr. Rendall procured specimens at Bathurst and kept them for some time as cage-birds. There are several examples from the Gambia in the British Museum, and Verreaux received it from Casamanse.

In the southern range of this Canary, Emin obtained a specimen at Redjaf, which is now in the British Museum along with one procured by Hedenborg at Senaar. Heuglin met with the species in the Bongo country, which is watered by

the Gazelle river. At the Blue Nile he found a nest which was cup-shaped and deep inside, it was constructed of a kind of hemp mixed with hairs and seed-down and lined with feathers, hair and down. It was placed about five feet from the ground and contained three eggs, which were pale greenish grey spotted at the thick end with brownish red and dusky brown; they measured 0·6 × 0·46. In this district, near Senaar, it frequents the native villages and the surrounding pasture-land and may be seen in flocks feeding on the ground, or perched on bushes or rocks near water. He also observed these Finches in Bogosland or Northern Abyssinia.

Mr. Witherby met with the species at Shebesha about ninety miles south of Khartoum, and in some acacias near the river at Wad Mariun, within twelve miles of Khartoum.

Serinus angolensis.

Fringilla angolensis, Gm. S. N. i. p. 918, 1788 *Angola.*
Serinus angolensis, Sharpe, Cat. B. M. xii. p. 367 (1888) *Damara, Orange R., Makalaka;* Shelley B. Afr. I. No. 302 (1896); Marshall, Ibis, 1896, p. 246; 1900, p. 239 *Mashona;* Neum. J. f. O. 1900, p. 287 *Uganda;* Stark, Faun. S. Afr. B. i. p. 178 (1900).
Fringilla tobaca, Vieill. Enc. Méth. p. 969 (1823) "*Senegal.*"
Linaria atrogularis, Smith, Rep. S. Afr. Exped. p. 49 (1836) *Kurrichaine.*
Angola Finch, Lath. Gen. Zool. iii. p. 309 (1783).

Adult. Forehead brownish white; crown, back of neck, mantle and lesser wing-coverts pale brown with blackish brown centres to the feathers; lower back bright sulphur yellow; upper tail-coverts dark brown with very broad white ends. Tail feathers dark brown with narrow pale edges to the outer webs, which edges broaden out into white ends on the inner webs. Wing: dark brown with pale edges to the feathers, broadest and of a slightly paler brownish buff on the terminal portion of the median and greater coverts and the inner secondaries, and faintly shaded with yellow on the primaries; wing-lining with the inner margins of the quills and the coverts brownish buff, the latter and the axillaries slightly tinted with yellow. Sides of head and the under parts generally brownish white washed with dark brown in front of the eyes and on the ear-coverts; throat irregularly, but sometimes strongly, mottled with dark brown or black; flanks streaked

with dark brown; under tail-coverts nearly uniform white. "Iris brown; bill brownish; legs flesh colour." Total length 4·25 inches, culmen 0·35, wing 2·5, tail 1·7, tarsus 0·5. ♂, 21. 8. 81. Orange R. (Bradshaw).

Adult female. Like the male in size and plumage. ♀, 14. 4. 68. Potchefstroom (T. Ayres).

The Angola Canary ranges northward from the Orange river into the Zambesi and Congo districts, and has been recorded from Uganda in tropical Central Africa.

According to Mr. Oscar Neumann, a specimen he obtained at Kampala in Uganda, May 25, 1894, belongs to this form and not to its ally, *S. reichenowi*. This considerably extends the range as previously known for the present species, the northern limit of which was the Loango Coast, where Falkenstein procured the species, for there can be no doubt it is not indigenous in Senegal, from whence the type of *Fringilla tobaca* nominally came.

The type of the species was obtained in Angola, as its name implies, and specimens have since been obtained there by Henderson. I do not find it recorded from Benguela, but Andersson met with this species both in Damaraland and further northward, congregating in large flocks and often associating with *S. butyraceus*. According to Dr. Bradshaw these Canaries are tolerably common on the Orange river, and Sir Andrew Smith found them near Kurrichaine, where he got the type of his *Linaria atrogularis*.

To the eastward, Mr. T. Ayres has procured specimens, now in the British Museum, at De Wet's Drift on the Vaal river, and at Potchefstroom. Between the Limpopo and Zambesi rivers specimens have been collected by the late Mr. Frank Oates in Matabele, and according to Mr. Guy Marshall, who shot a specimen at Salisbury, it is not nearly so common in Mashonaland as *S. marshalli*.

Serinus reichenowi.

Serinus reichenowi, Salvad. Ann. Mus. Genov. 1888, p. 272 *Cialalaka;* Reichen. J. f. O. 1891, p. 159 *Mpapwa, Naiwasha;* Shelley, B. Afr. I. No. 301 (1896); Jackson, Ibis, 1899, p. 622, *Machako's, Elgeyu, Guara-Molo R.;* Hartert in Ansorge's Under Afr. Suu, p. 347 (1899) *Kikuyu;* Grant, Ibis, 1900, p. 136, id. and Reid, Ibis, 1901, p. 626 *S. Abyssinia.*

Poliospiza reichenowi, Reichen. Vög. D. O. Afr. p. 196 (1894) *Mpapwa.*

Crithagra atrigularis (nec Smith) Fisch. Zeitschr. 1884, p. 322 *Naiwasha.*

Crithagra angolensis (nec Gm.) Fisch. J. f. O. 1885, p. 136 *Naiwasha.*

Serinus fagani, Sharpe, Bull. B. O. C. vi. p. 7 (1896) *Machako's;* Hinde, Ibis, 1898, p. 579 *Machako's.*

Adult. Upper parts dark brown with paler sides to the feathers, and a large patch of canary yellow on the rump; the moderately broad pale edges to the wing-feathers fade into buffy white on the inner secondaries and the ends of the greater and median coverts; under wing-coverts white slightly mottled with brown and tinted with yellow at the bend of the wing; tail dark brown, with narrow pale edges to the feathers, very slightly tinted with yellow. A white forehead extending into a broad similarly coloured eyebrow; a band through the eye, cheeks and ear-coverts dark brown; some white beneath the eye, between the cheeks and ear-coverts, and extending over the sides of the upper neck. Under parts white, lower throat with a partial collar formed of dark brown spots, and the sides of the body strongly streaked with dark brown; a faint tinge of yellow on the centre of the lower chest. "Iris brown; bill and legs dusky black." Total length 4 inches, culmen 0·35, wing 2·7, tail 1·9, tarsus 0·5. ♂, ♀, 11. 2. 1. Kora (A. E. Pease).

Young. Differ in being more streaked on the chest.

Reichenow's Canary ranges from Ugogo into Shoa.

The most southern known range for this species is Mpapwa in Ugogo, where Emin procured a pair, June 28, 1890. In British East Africa, at Machako's on August 17, 1896, Dr. S. L. Hinde shot a female, the type of *S. fagani*, Sharpe, and remarks: "Very common on the dried-up grass-plains, either in pairs or flocks. Its movements and habits when on the ground reminded me of our own Siskin." Dr. Bowdler Sharpe writes (Ibis, 1899, p. 623): "There can be no doubt that my *Serinus fagani* is the same as *S. reichenowi*, of which we have

lately received a specimen from Mpapwa, presented by the Berlin Museum."

Mr. Jackson found the species at Machako's, also at Elgeyu, in flocks and fairly plentiful, and writes: "♀ ad. Guasa Molo river, September, 1896. Shot for identification as it flew off its nest. Nest very small, on branch of bush, about six inches from ground. Egg (only one) like a Linnet's." In the Kikuyu country the species has been procured by Dr. Ansorge. In Shoa the types of the species, a male and two females, were collected by Dr. Ragazzi at Cialalaka in 1885; Lord Lovat shot a pair at Hado, and Mr. A. E. Pease found the species very common at Kora.

Serinus xanthopygius.

Serinus xanthopygius, Rüpp. N. Wirb. Vög. p. 96, pl. 35, fig. 1 (1835); Sharpe, Cat. B. M. xii. p. 365 (1888) *Senafé;* Hartert, Kat. Vög. Mus. Senck. p. 57 (1891) *Abyssinia;* Shelley. B. Afr. I. No. 298 (1896); Grant, Ibis, 1900, p. 136 *Gerru.*

Poliospiza zanthopygia, Hartl. Abhandl. nat. ver Brem. 1891, p. 26 *Usongo.*

Carpodacus uropygialis, Licht. Nomencl. Av. p. 48 (1845) *Arabia.*

Adult. Much resembles *S. angolensis* and *S. reichenowi*, from which it differs in the upper parts being of a darker and more uniform brown; the upper tail-coverts and the tail entirely uniform brown; and the chin and throat uniform white.

Forehead, crown, back of neck and mantle earthy brown, with rather obscure dark centres to the feathers; lower back bright sulphur yellow; upper tail-coverts, tail, and the wings almost uniform brown; under surface of wing with the inner margins of the quills and the coverts brownish buff. Sides of the head and neck uniform brown with the front of the cheeks buffy white, of the same colour as the chin and throat; breast and under tail-coverts white shaded with ashy brown on the crop and sides of the body. "Iris brown; bill and legs brownish" (Lord Lovat). Total length 4·4 inches, culmen 0·35, wing 2·6, tail 1·8, tarsus 0·55. ♂, 10. 8. 68. Kokai (Jesse).

Rüppell's Yellow-rumped Canary inhabits Eastern Africa between 7° S. lat. and 16° N. lat., and ranges into Arabia.

The only record I can find of the occurrence of this species south of 10° N. lat. rests on the assertion of Hartlaub, that two specimens in Emin's last collection positively belong to this species. These were procured in the Ugogo district at Usongo and Gomba in the Ikungu country.

It is curious how this species and its very near allies encroach upon each other's territory, for *S. reichenowi* ranges from Ugogo into Shoa; *S. flavigula* inhabits Shoa, and Lord Lovat has shot a specimen of *S. xanthopygius*, Rüpp., in the same district at Gerru in about 10° 30′ N. lat. 40° E. long.

According to Heuglin the species is to be met with in pairs and flocks on the stony districts interspersed with juniper bushes, from the tops of which the males pour forth their loud melodious song. He found them as far north as Keren, near the Anseba, along the valley of which river Mr. Jesse also met with the species. Dr. Blanford writes: "I only twice obtained specimens of this species, both on the highlands, one near Senafé, the other south of Antalo."

Serinus flavigula.

Serinus flavigula, Salvad. Ann. Mus. Genov. 1888, p. 272 *Shoa;* Shelley, B. Afr. I. No. 299 (1896).

Crithagra xanthopygia (nec Rüpp.) Salvad. Ann. Mus. Genov. 1884, p. 172 *Shoa.*

Types. "Similar to *S. xanthopygius*, but differs in having a yellow patch on the throat, precisely as in *Xanthodira dentata.*

"Above grey with dusky centres to the feathers; rump pale lemon yellow; upper tail-coverts dusky, tinted with green; below pale grey, throat, abdomen and under tail-coverts white; throat with a patch of yellow; wings and tail dusky grey with greenish edges to the quills and tail-feathers; bill dusky pink; feet pale; iris chestnut. Total length 4·6 and 4·4 inches, culmen 0·36, wing 2·64, tail 1·96 and 1·84, tarsus 0·56 and 0·52." (Salvadori.)

The Shoa Canary inhabits the western portion of Southern Abyssinia.

In the Shoa country this species replaces, at least to some extent, *S. xanthopygius*, from which it may be most readily distinguished by the spot of yellow on the lower throat. All that I know regarding it, is that Antinori procured a specimen on the Aigabar Pass and Dr. Ragazzi's collection contained two others from Ambokarra and Malca-ghebdu, and that the yellow spot on the throat is alike in them all.

Serinus crocopygius.

Poliospiza crocopygia, Sharpe, Ibis, 1871, p. 101 *Damara*.
Serinus crocopygius, Sharpe, Cat. B. M. xii. p. 360, pl. 8 (1888) *Benguela, Damara, Great Namaqua;* Shelley, B. Afr. I. No. 290 (1896); Stark, Faun. S. Afr. B. i. p. 176 (1900).
Buserinus albigularis, Hartl., P.Z.S. 1865, p. 95 *Bengula*.

Adult. Upper parts ashy brown streaked with dark brown on the crown and mantle; lower back bright canary yellow; wings and tail dark brown, the feathers edged with brownish white; sides of forehead and a broad complete eyebrow white, separated from a white patch below the eye by a dusky band from the nostril which branches off across the white cheeks to the side of the throat; chin and throat pure white with a few dusky spots towards the chin; ear-coverts, sides of neck, crop, chest and sides of body ashy brown, sharply contrasting with the white throat and fading away towards the centre of the body into white like the abdomen and under tail-coverts; thighs white slightly mottled with brown. Total length 5·4 inches, culmen 0·55, wing 3·3 and 3·1, tail 2·25 and 2·1, tarsus 0·75. ♂, ♀, Damara (Andersson).

The Damara White-throated Canary ranges from Benguela into Great Namaqualand.

The specimen obtained by Mr. Monteiro in the province of Benguela and referred to *Buserinus albigularis* by Hartlaub (P. Z. S. 1865, p. 95), belongs to this species, and is now in the British Museum. To the south of the Cunene river these Canaries are apparently more abundant, for Andersson procured four specimens in Damara, including the type from Otjimbinque, June 9, 1864, and one in Great Namaqua, all of which are in the British Museum. However, he writes:

"This species is sparingly met with in Damara and Great Namaqualand; it is generally seen about rocks in the immediate neighbourhood of water, to which it resorts in small flocks in the morning and evening to quench its thirst. Its food consists of seeds and berries."

Serinus albigularis.

Crithagra albigularis, Smith, S. Afr. Quart. Journ. ii. p. 48 (1833) *S. Afr.*

Serinus albigularis, Sharpe, Cat. B. M. xii. p. 360 (1888) *S. Afr.*; Kuschel, J. f. O. 1895, p. 342 *egg*; Shelley, B. Afr. I. No. 289 (1896); Nehrkorn, Kat. Eiers. p. 110 (1899) *egg*; Stark, Faun. S. Afr. B. p. 174 (1900).

Crithagra selbyi, Smith, Rep. S. Afr. Exped. App. p. 50 (1836) *S. Afr.*

Crithagra cinerea, Swains. Class. B. ii. p. 294 (1837).

Adult. Very similar to *S. crocopygia*, but slightly darker both above and below; the yellow on the lower back duller, and there is a less amount of white on the sides of the forehead and the eyebrows. Total length 6 inches, culmen 0·55, wing 3·1, tail 2·3, tarsus 0·8. Cape Colony (Butler.)

The Cape White-throated Canary is apparently confined to Cape Colony.

Layard wrote: "This species is called by the colonists 'Dic-bec Saysie' and 'Berg Saysie'; it is very abundant about Saldanha Bay, Colesberg and the Berg river." According to Stark, it is very common to the north of Cape Town, especially towards Saldanha Bay. "Here it inhabits the bush-overgrown sand-duns close to the beach, and feeds on the seeds of several of the more common weeds. In spring the cocks sing loudly and melodiously from the tops of the bushes, their song being, to my ear, superior to that of the Cape Canary. About the beginning of September they proceed to build their nests, open cup-shaped structures, in the bushes, frequently in a 'milk-bush,' about four feet from the ground. These are rather loosely constructed of thin, pliable twigs and dry grass-stems, and are invariably lined with the white downy blossoms of a

common weed. Towards the end of the month the females lay three or four eggs of a very faint bluish white, sometimes plain, more often sparingly marked at the large end with one or two spots or hair-like streaks of deep purplish black. They average 0·80 × 0·60.

"Both the male and female sit very close on their eggs, and defend their nest valiantly against aggressors. On almost every occasion on which I have inspected a nest of this bird I have had my fingers pecked for my pains, and with their powerful bills they can inflict a severe bite. On one occasion I saw a pair of these Finches attack a large snake with great courage and success.

"The young are fed on insects and macerated seeds from the crops of the old birds. They remain in the nest for a little more than a month."

Serinus leucopterus.

Crithagra leucoptera, Sharpe, Ann. and Mag. N. H. (4) viii. p. 235 (1871) *S. Afr.*

Serinus leucopterus, Sharpe, Cat. B. M. xii. p. 361, pl. 9 (1888) *S. Afr.*; Shelley, B. Afr. I. No. 291 (1896); Stark, Faun. S. Afr. B. i. p. 177 (1900).

Type. Upper parts earthy brown with a trace of white on the forehead; crown more distinctly mottled, with dark centres to the feathers, than the mantle; lower back and upper tail-coverts uniform with a slight ashy yellow shade on the rump. Wing dark brown, with narrow brownish white edges widening out into white terminal bands on the median and greater coverts and the inner secondaries. Tail feathers narrowly edged with brownish white. Under surface of wing dark brown with the inner edges of the quills and the under coverts paler ashy brown; sides of the head and sides of the throat uniform earthy brown; chin and throat white mottled with blackish brown on the upper half of the throat; lower throat and breast earthy brown fading into buff down the centre of the breast, abdomen and under tail-coverts, the latter with brown centres. Total length 5·8 inches, culmen 0·5, wing 2·8, tail 2, tarsus 0·7. S. Africa (Layard).

The White-throated Brown Canary inhabits South Africa. All that is known regarding this species is that the type was procured by Layard while he was in South Africa, and is apparently a full grown bird, with no indication of its not having assumed its full plumage, but having neither sex, date nor locality marked on the label: it may have been a cage-bird with the colouring of the plumage affected by the nature of the food and general conditions under which it lived.

It is extremely common in Africa to meet with very nearly allied forms inhabiting neighbouring districts, which are separated as species on the strength of a single specimen. A large series may, or may not, prove these differences to be of specific value, but I am bound to recognise such forms as species where there is a want of material to base an opinion upon.

Genus V. POLIOSPIZA.

Bill more slender than that of *Serinus* and very like that of *Passer*, the sides from the gape being nearly straight with a very slight uniform curve throughout their length. Nostrils hidden. Wing, tail, tarsi and feet very similar in the three genera. Nest cup-shaped and placed on a branch. Plumage brown and white with a broad white eyebrow; sexes similar in plumage; young birds with stripes on the under parts.

	Type.
Poliospiza, Bp. Consp. i. p. 519 (1850)	P. gularis.

This genus comprises four species, all of which are confined to tropical and South Africa.

It is no easy matter to find a good English name for a bird, and it is worse than useless to propose one that is not likely to be generally adopted. I suggest to call the members of this genus Seed-eaters, the oldest name I can find for them. They are no more Canaries than Sparrows, but nearly intermediate.

KEY TO THE SPECIES.

a. Crown with white edges to the feathers.
  a^1. Under parts uniform.
    a^2. Upper throat more mottled with black . *gularis, ad.*
    b^2. Throat white, less mottled with black . *canicapilla.*
  b^1. Crop and flanks streaked with brown.
    c^2. Dark crop-marks slightly smaller . . . *gularis, juv.*
    d^2. Dark crop-marks slightly larger . . . *reichardi.*
b. Crown with no white edges to the feathers . . *tristriata.*

Poliospiza gularis. (Pl. 26, fig. 1.)

Linaria gularis, Smith, Rep. S. Afr. Exped. p. 49 (1836) *Cape Col.*
Poliospiza gularis, Sharpe, Cat. B. M. xii. p. 343 (1888) *Cape Col. Natal, Transvaal;* Kuschel, J. f. O. 1895, p. 341 *egg;* Shelley, B. Afr. I. No. 273 (1896); Marshall, Ibis, 1896, p. 246, 1900, p. 239 *Mashona;* Nehrkorn, Kat. Eiers, p. 109 (1899) *egg;* Stark, Faun. S. Afr. B. i. p. 165 (1900); Haagner, Ibis, 1891, p. 194 *Transvaal.*
"Fringilla humilis, Licht." Bp. Consp. Av. i. p. 511 *S. Africa.*
Poliospiza striaticeps, Hartl. in Layard's B. S. Afr. p. 203 (1867) *S. Africa.*

Adult. Upper parts and sides of the head brown, with a complete broad eyebrow and front of the forehead white, and the edges of the feathers of the crown and back and sides of neck whitish; mantle with rather obscurely marked dark centres to the feathers; median and greater wing-coverts with rather broad whity-brown edges; remainder of quills, like the tail-feathers, have narrow buff edges; inner lining of wing brown with narrow whitish inner edges to the quills and larger coverts, the remainder of the coverts and the axillaries being buffy brown like the chest; chin and throat white mottled with black below the chin; crop and under surface of body brownish buff, darkest on the chest and sides of body. "Iris dark hazel; bill horn colour; legs dark brown" (T. E. Buckley). Total length 5·5 and 5·1 inches, culmen 0·5, wing 2·9 and 2·8, tail 2·3, tarsus 0·65. ♂, ♀, 14. 3. 84. Pinetown (T. L. Ayres).

Young. Differ in having some brown centres to the feathers of the chest and flanks.

The Cape Streaky-crowned Seed-eater ranges southward from Great Namaqua- and Mashona-lands.

Andersson met with this species sparingly in Great Nama-

1. Poliospiza gularis.
2. " reichardi.

qualand. Sir Andrew Smith, who discovered the type, found them inhabiting Cape Colony to as far north as Latakoo. In the British Museum there are specimens from the Knysna, Grahamstown, Kingwilliamstown, Natal, Transvaal, the Makalaka country and Mashonaland.

Atmore, writing from Geneva Fontein, states: "Tobacco seed is the great attraction to this species; they feed also on chickweed and groundsel, do not congregate, but go in small lots of from two to eight individuals." According to Stark: "If disturbed they utter a sharp 'chirp' as they take flight and fly off to seek refuge in some thick bush, but as a rule they are rather silent birds. In September and October they build in bushes or low trees. The nest is open and cup-shaped, neatly and compactly constructed of dry grass and bents, lined with white cottony seeds and down. The eggs, three or four in number, are very faint bluish-white with usually a few dots or a single streak of dark purplish black towards the larger end. They measure 0·87 × 0·62."

In Natal I did not meet with this bird during the month I spent at Durban; but my friend Mr. T. L. Ayres told me that it is common at Pinetown. His father, Mr. T. Ayres, found a nest in a low bush on the top of a very exposed hill and another one in the valley below with young birds, in December, and at Colenso Col. Savile Reid met with them breeding in November.

In the Transvaal, according to Mr. T. Ayres: "This is as common a Sparrow about Rustenburg as *Passer arcuatus* (which I did not meet with in the Magaliesbergen) is at Potchefstroom. In habits the present species appears to be somewhat similar to *P. arcuatus*, congregating in winter in the same manner." During his journey with Jameson through Matabele, they procured a specimen at Matje Umsclope, near Buluwayo, in November. In Mashona, Mr. Guy Marshall informs us that

it is called by the natives the "Nimba," but it is apparently rare in these parts, as he has recorded only a single specimen, a male, shot by him at Salisbury, November 10, 1894.

Poliospiza canicapilla.

Poliospiza canicapilla, Du Bus, Bull. Ac. R. Bruxelles, 1855, p. 151 *Senegal.*

Poliospiza flegeli, Hartert, J. f. O. 1886, p. 583 *Loko;* Sharpe, Cat. B. M. xii. p. 343 (1888), Shelley, B. Afr. I. No. 275 (1896); Reichen. J. f. O. 1897, p. 41 *Togo;* Hartert, Nov. Zool. 1901, p. 340 *Niger.*

Type. "Above brownish grey; crown brownish black mottled with white; beneath grey; sides of head brownish grey; eyebrow, throat, abdomen and under tail-coverts white; wings and tail dark brown with greyish edges to the feathers. Total length 4·8 inches, culmen 0·45, wing 2·95, tail 2, tarsus 0·6." Senegal.

Adult. "Above brownish grey, with the head more dusky and irregularly streaked with white; above the eye two white stripes, and the sides of the head more dusky. Under parts uniform pale brownish grey, paler on the abdomen and under tail-coverts and fading into white on the throat where there are two small dark spots close to the bill. Tail brown, the feathers with dusky shafts and paler edges. Quills and wing-coverts dusky brown with paler outer edges. Iris greyish brown; bill and feet brownish flesh colour. Total length 5·2 inches, culmen 0·4, wing 2·9, tail 2·15, tarsus 0·48. ♀, Loko." (Hartert).

The Senegal Seed-eater ranges from Senegambia to the Niger.

The type is in the Brussels Museum, labelled as coming from Senegal. In Togoland, Mr. E. Baumann met with the species at the Misahöhe station and the only other specimen yet recorded is the type of *P. flegeli* which was procured by Mr. Hartert at Loko on the Benue branch of the Niger in about 8° E. lat. where he met with a few of these birds in company with *Serinus hartlaubi*, feeding together on the ground.

Poliospiza reichardi. (Pl. 26, fig. 2.)

Poliospiza reichardi, Reichen. J. f. O. 1882, p. 209 *Kakoma;* Sharpe, Cat. B. M. xii. p. 343 (1888); Reichen. Vög. D. O. Afr. p. 196 (1894); Shelley, B. Afr. I. No. 274 (1896); id. Ibis, 1899, p. 367 *Ikawa;* Jackson, *t. c.* p. 620 *Kamassia.*

Poliospiza striatipectus, Sharpe, Ibis, 1891, p. 258 *Elgeyu;* Shelley, B. Afr. I. No. 276 (1894); id. Ibis, 1897, p. 528 *Nyika.*

Adult. Entire plumage brown above and the under parts white streaked with brown on the throat and flanks. Feathers of the forehead, crown and back with white edges; back and upper tail-coverts nearly uniform, the edges of the feathers being only slightly paler; the edges of the median and greater coverts of a whitish shade, and slightly broader at the ends of these coverts and on the sides of the inner secondaries; inner edges of the quills and the under wing-coverts whity brown. Sides of head brown with a white eyebrow extending back to the sides of the nape, and a slight mottling of white below the ear-coverts; under parts white with broad brown shaft-stripes on the throat and flanks, most strongly marked on the crop; thighs mottled with brown. Iris, bill and legs brown. Total length 5·5 and 5·4 inches, culmen 0·45, wing 3·1, tail 2·3, tarsus 0·55. ♂, 24. 8. 96, Kamassia; ♀, 8. 7. 90. Elgeyu (Jackson).

Reichard's Seed-eater ranges from the Nyasa district to the Equator.

In Nyasaland Mr. Alexander Whyte procured a specimen on the Nyika plateau, and Colonel Manning another at Ikawa on the Tanganyika plateau. Böhm discovered the species at Kakoma, where he procured two males, April 14, 1881. In the most northern range known for this species, Mr. Jackson shot a pair, which were breeding at Elgeyu, July 8, 1890, and remarks: "Sings very sweetly, like a Linnet:" these are the types of *P. striatipectus*, Sharpe. He afterwards met with the species at Kamassia in August.

Poliospiza tristriata.

Serinus tristriata, Rüpp. N. Wirb. Vög. p. 97, pl. 35, fig. 2 (1835) *Abyssinia.*

Poliospiza tristriata, Sharpe, Cat. B. M. xii. p. 345 (1888) *Shoa, Abyssinia;* Salvad. Ann. Mus. Genov. 1888, pp. 276, 537 *Shoa;* Hartert, Kat. Mus. Senck. p. 75 (1891) *Abyssinia;* Kuschel, J. f. O.

1895, p. 341 *egg;* Shelley, B. Afr. I. No. 277 (1896); Nehrkorn, Kat. Eiers. p. 109 (1899) *egg;* Grant, Ibis, 1900, p. 131; id. and Reid, Ibis, 1901, p. 625 *S. Abyssinia.*

Fringilla tristriata, Fisch. and Reichen. J. f. O. 1878, p. 266 *Melinda;* Fisch. *t. c.* p. 281 *Formosa Bay.*

Poliospiza isabellina, Gigl. Ann. Mus. Genov. 1888, p. 33 *Shoa.*

Poliospiza pallidior, Lort Phillips, Ibis, 1898, p. 398 *Somali.*

Adult. Mostly uniform brown, paler on the under parts and with darker centres to the feathers, distinct on the forehead and crown, and obsoletely indicated on the mantle; a complete broad white eyebrow, chin and upper throat white, with a partial blackish band down the sides; under wing-coverts ashy brown like the breast; centre of abdomen and the under tail-coverts buff. "Iris brown; bill dusky brown; legs brown" (A. E. Pease). Total length 4·6 inches, culmen 0·4, wing 2·7 and 2·5, tail 2·3 and 2·2, tarsus 0·65. ♂, ♀, Senafé (Blanford).

Immature. Differ in having the upper parts more mottled, and the under parts whiter and strongly striped with brown on the lower throat and the flanks. ♂, 8. 2. 99. Kosso (Lovat); ♀, 5. 3. 97. Wagga (Lort Phillips).

Rüppell's Seed-eater probably ranges from Caconda in Benguela to Port Melinda and northward over Abyssinia.

Prof. Barbaza du Bocage informs us that Anchieta procured a single specimen of this species at Caconda in Benguela. His description of the plumage agrees well with this bird, and there is nothing specially to remark in the measurements excepting that of the wing, "86 m." = 3·44 inches, this must, I think, be a misprint for 68 m. = 2·72, otherwise I should have no hesitation in regarding it as a new species. On following the line from Caconda to Melinda I find that Mr. Nehrkorn describes an egg of this species (agreeing with Heuglin's description) from Marungu, which country borders on to the south-west end of Lake Tanganyika.

Fischer first met with the species at Melinda, and afterwards came across a flock in Formosa Bay. In Somaliland Speke procured a specimen, and wrote: "Shot on the mountains, where they fly about in flocks like our English Sparrows."

In this country Mr. Lort Phillips procured his five typical specimens of *P. pallidior* in January and February, 1897: these he considered to represent a pale race of *P. tristriata*, but I cannot myself see that they differ from the typical Abyssinian form. He found them frequenting the more thickly wooded parts of the Goolis range and the Wagga mountains in small family parties. In Abyssinia, Rüppell discovered the type, and Heuglin found the species abundant in the highlands of Bogos and Abyssinia between 4,000 and 11,000 feet, and met with it in Gallaland. They were occasionally in large flocks, and he likens their note to that of our common House-Sparrow. Dr. Blanford remarks: "Very common throughout the highlands, generally amongst bushes, in small flocks or singly. It keeps much to the ground. I never saw it at lower elevations." Count Salvadori records fourteen specimens from Shoa, collected there by Antinori and Ragazzi, and observes that one of these, a very pale isabelline variety, certainly of this species, was made the type of *P. isabellina*. In this district Lord Lovat collected specimens at Lake Harrar Meyer, Deru and Kosso, and remarks: "Usually met with in pairs. This Finch is more an inhabitant of woods than of cornfields."

Heuglin describes an egg, he took of this species, as pale greenish with minute and larger violet spots on the thick end, and measuring 0·8 × 0·62. Mr. Nehrkorn describes an egg from Marungu, which he refers to this species, as being bluish green with a few blackish brown dots, and measuring 0·8 × 0·6.

I have called the species Rüppell's Seed-eater after its discoverer, for to translate the badly chosen Latin name into the Three-striped Seed-eater, we must count the white throat as one stripe, and the eyebrows as the other two, and then the name would be equally applicable to all the members of this genus.

Genus VI. PASSER.

Bill moderately short and stout, about as broad as high at the nostrils. Nostrils basal, rounded and hidden. Wing rather short but longer than the tail, and, when closed, falls short of the tip of the tail by more than the length of the tarsus; second, third and fourth primaries nearly equal and the longest, first primary a little shorter and attenuated. Tail nearly square with no portion white. Tarsi and feet stout and the claws curved and strong. Plumage of the sexes generally but not always different; young like the adult females. Nest bulky and rounded, covered in above and generally hidden in a hole or under some shelter. Eggs usually five in number, whitish, spotted and freckled with dusky brown or grey.

	Type.
Passer, Briss. Orn. iii. p. 71 (1760)	P. domesticus.
Pyrgitopsis, Bp. Consp. i. p. 510 (1850)	P. simplex.
Auripasser, Bp. *t. c.* p. 519	P. luteus.
Salicipasser, Bogd. Tr. N. H. Soc. Kazan, viii. p. 60 (1879)	P. montanus.
Sorella, Hartl. J. f. O. 1880, p. 221	P. emini.
Pseudostruthus, Oust. Le Naturaliste, 1890, p. 274. .	P. crassirostis.

The genus *Passer* comprises about 30 species, of which 19 occur in the Ethiopian Region. 13 are confined to that region, and all of these, with the exception of *P. diffusus*, have a rather restricted range.

KEY TO THE SPECIES.

a. Mantle mottled with some dark centres to the feathers.
  a^1. Throat black.
    a^2. Crown rufous.
      a^3. Cheeks, ear-coverts and breast buffy yellow . . . . . *castanopterus*. 234
      b^3. No yellow in the plumage.
        a^4. Flanks streaked . . . . . *hispaniolensis*, ♂, *ad.* 235
        b^4. Flanks uniform.
          a^5. No black patch on hinder part of ear-coverts . . . . . *italiæ*, ♂, *ad.* 236
          b^5. A black patch on hinder part of ear-coverts . . . . . *montanus*. 237

b^2. Crown grey.
c^3. Lower back ashy-brown with no rufous shade.
c^4. Ear-coverts white with the upper part black.
c^5. Darker; more rufous on wings; more black on head and throat; under parts less white . . . . *insularis*, ♂, *ad.*
d^5. Paler . . . . . *hemilencus*, ♂, *ad.*
d^4. Ear-coverts whitish with no black. *domesticus*, ♂, ad.
d^3. Lower back with a rufous shade.
e^4. Mantle browner than the rufous portion of eyebrow . . . . . *jayœnsis*, ♂, *ad.*
f^4. Mantle pale cinnamon, of the same shade as the rufous portion of eyebrow.
c^5. Mantle with narrower black stripes and not browner than the lower back; ear-coverts entirely pure white . . . . . *motitensis*, ♂, *ad.*
f^5. Mantle with broader black stripes, and browner than the lower back.
a^6. Ear-coverts entirely grey . . *cordofanicus*, ♂, *ad.*
b^6. Ear-coverts with hinder half jet black, front half pure white. *shelleyi*, ♂, *ad.*
b^1. Throat, with no black.
c^2. Otherwise similar to the adult males. *Females and young of most of the above species.*
d^2. Never with any black on the head or neck; adult males with the mantle uniform.
c^3. Mantle strongly mottled; throat with some rufous; wing 2·3 . . . . . *emini*, ♀, ♂, *juv.*
f^3. Mantle obsoletely mottled; no rufous on the throat.
g^4. Smaller; wing 2·3; throat white, tinged with yellow . . . . . *cuchlorus*, ♀.
h^4. Larger; wing 3·2; throat white tinged with grey . . . . . *diffusus var.*
b. Mantle uniform.
c^1. Throat black.
e^2. Crown and most of the head black . . *arcuatus*, ♂, *ad.*
f^2. Crown sandy buff . . . . . *simplex*, ♂, *ad.*

d^1. Throat with no black; no black on the head.	
g^2. Crown and upper parts sandy rufous. .	*simplex*, ♀.
h^2. Crown and head grey.	
g^3. Smaller; wing 3·1 to 3·5; bill slighter; under parts whiter	*diffusus*.
h^3. Larger; wing 3·6; bill stouter; under parts greyer	*crassirostris*.
i^2. Crown, and often the whole head, neck and body dark cinnamon	*emini*, ♂, *ad.*
k^2. Entire head, neck and breast yellow.	
i^3. Mantle cinnamon	*luteus*, ♂, *ad.*
k^3. Mantle yellow	*cuchlorus*, ♂, *ad.*

Passer castanopterus. (Pl. 27, fig. 1.)

Passer castanopterus, Blyth, J. A. S. Beng. xxiv. p. 302 (1855) *Somali;* Sharpe, Cat. B. M. xii. p. 328 (1888); Shelley, B. Afr. I. No. 265 (1896); Lort Phillips, Ibis, 1898, p. 397 *Somali;* Grant and Reid, Ibis, 1901, p. 624 *Somali.*

Adult male. Forehead, crown, and back of neck uniform pale cinnamon, shading into the dusky grey of the back and upper tail-coverts; upper back mottled with broad black shaft stripes. Wing with the coverts and scapulars pale cinnamon, the former partially washed with grey; a few rather indistinct whitish tips to the median coverts, and the outermost greater coverts blackish brown, like the primary coverts and quills, with rufous buff edges, much broader on the inner secondaries. Tail slaty brown with narrow pale brown edges to the feathers. Cheeks, ear-coverts, front half of neck, breast and under tail-coverts yellowish buff; in front of eyes, chin, and a broad central band down the throat black; crop and sides of the body shaded with ash. "Iris brown; bill black; tarsi and feet pale brown" (A. E. Pease). Total length 5·2 inches, culmen 0·4, wing 2·7, tail 2·1, tarsus, 0·65. ♂, 16. 1. 97. Somali (Lort Phillips).

The Berbera Sparrow inhabits Somaliland.

This species is, up to the present time, known only from the northern portion of Somali, for the locality "Gaboon" on a specimen in the Paris Museum is certainly incorrect. Referring to the type, Speke wrote: "This specimen was shot on the plateau, amongst a large flock." "The plateau" probably refers to the first plateau-land on leaving Berbera.

1. Passer castanopterus.
2. " shellevi.

Mr. Lort Phillips writes: "This beautiful little Sparrow represents in Berbera our common bird at home. Its habits and note are almost identical with those of the latter. In January they were very busy nest-building, carrying long streamers of grass, &c., to holes in the wall under the verandah-roof." Mr. Pease only met with the species on the coast at Zaila, and in the British Museum there are two specimens from the same town procured by Captain C. G. Nurse.

Passer hispaniolensis.

Fringilla hispaniolensis, Temm. Man. Orn. p. 353 (1820).

Passer hispaniolensis, Bolle, J. f. O. 1856, p. 31 *Cape Verde Is.*; Sharpe, Cat. B. M. xii. p. 317 (1888) *Cape Verde Is. Nubia;* Shelley, B. Afr. I. No. 260 (1896).

Fringilla salicicola, Vieill. Faune France, p. 417 (1828).

Passer salicicola, Alexander, Ibis, 1898, pp. 83, 92, 104, 115, 280 *Cape Verde Is.*

Pyrgita salicaria, Bp. Consp. List, B. Eur. and N. Amer. p. 30 (1838).

Passer salicarius, Dohrn, J. f. O. 1871, p. 6 *Cape Verde Is.*

Adult male. Forehead, crown, and back of neck uniform deep chestnut, many of the feathers generally have partial buff edges; an incomplete narrow white eyebrow; mantle and middle-back black with broad buff edges to the feathers, remainder of upper parts as in *P. domesticus;* entire ear-coverts and sides of neck white, chin, throat, and crop black; breast and under tail-coverts buffy white with large angular black centres to the feathers of the fore-chest and sides of body. Iris brown; bill brown; legs pale brown. Total length 6 inches, culmen 0·5, wing 3·0, tail 2·2, tarsus 0·8. ♂, 31. 1. 68. Egypt (Shelley).

Adult female. Like the female of *P. domesticus.*

The Spanish Sparrow inhabits the Cape Verde Islands and Abyssinia to as far south as the Blue Nile, and ranges from the Canary Islands through Southern Europe and North Africa into India.

It is common and generally distributed over the Cape Verde Islands. Capt. Alexander, during his visit to Santiago, found the species frequenting the valleys, and most abundant

at La Catrina, and writes: "The favourite resort of these birds is a grove of tall coconut trees, in the tops of which they build their nests, and owing to this the species has gained the name of 'Coconut-bird' from the natives. The flight is very straight and steady, and a clear musical chirp is often uttered on the wing. They cause a considerable amount of damage to the oranges, in which they drill big holes. The number of males predominates over the females to a large extent." In the adjoining island of Maio he found "small clumps of acacia-bushes, in the valley close to the sea, had their upper branches crammed with bulky domed nests, hardly a foot of space intervening between them."

In North-east Africa the Spanish Sparrow has been recorded by Hartmann from the Upper Blue Nile, but Heuglin did not meet with it further south than Ambukol. It probably does not remain to breed in Abyssinia, for when I was in Egypt it appeared to me that it left that country early in February.

Passer italiæ.

Fringilla italiæ, Vieill. N. Dict. Hist. Nat. xii. p. 190 (1817).
Passer italiæ, Sharpe, Cat. B. M. xii. p. 315 (1888); Shelley, B. Afr. I. No. 259 (1896).

Adult male. Similar to *P. domesticus*, but differs in the forehead, crown and back of neck being uniform chestnut, sometimes with a few buff margins to these feathers; a partial narrow white eyebrow; entire ear-coverts and sides of the neck white. Total length 5·8 inches, culmen 0·45, wing 3·1, tail 2·4, tarsus 0·8. ♂, 20. 11. 98. Florence.

The Italian House-Sparrow replaces, to a great extent, our Common House-Sparrow in Italy, and has been said to range into Palestine and through Egypt to the Blue Nile.

Rüppell records the species as being abundant in Egypt and Nubia, and according to Heuglin it ranges to as far south

as the Blue Nile, and was met with on the Arabian coast at Djidda, but I find no more recent mention of the Italian Sparrow from the Ethiopian Region.

Passer montanus.

Fringilla montana, Linn. S. N. I. p. 324 (1766).

Passer montanus, Sharpe, Cat. B. M. xii. p. 301 (1888); Hartert, Kat. Vög. Mus. Senck. p. 60 (1891) *Kordofan;* Shelley, B. Afr. I. No. 256 (1896).

Adult male. Forehead, crown and nape uniform vinous chocolate; mantle pale rufous brown with broad black shaft-stripes; remainder of back, upper tail-coverts and the tail uniform brown, the feathers of the latter with narrow paler outer edges. Wings darker brown with the lesser coverts rufous, median-coverts black with broad white terminal margins, remainder of the feathers with pale rufous brown edges fading into white terminal marks on the greater coverts; under surface of quills brown with their inner margins whitish like the axillaries and under wing-coverts. Fore part of sides of head, feathers beneath the eye, a large portion of the ear-coverts, chin and a broad band down the throat jet black; remainder of sides of head, sides of upper neck and sides of throat white; breast and under tail-coverts ashy white, slightly paler down the centre and tinted with brown on the flanks and thighs. Iris brown; bill black; tarsi and feet pale brown. Total length 5·5 inches, culmen 0·4, wing 2·8, tail 2·1, tarsus 0·7. ♂, 6. 5. 80. Havre (E. Hargitt).

Adult female. Like the male.

The Tree-Sparrow ranges from North-east Africa over the greater portion of Europe and Asia, eastward into Japan.

The right this species has to be included in the Ethiopian fauna rests on a specimen in Rüppell's collection, nominally from Kordofan.

I may remark, as a hint to future travellers, that I have not seen a specimen of *P. montanus*, *P. italiæ* or typical *P. domesticus*, Linn., from Africa south of the Tropic of Cancer, and specimens of any of these sparrows would, I feel sure, be appreciated at the British Museum.

Passer insularis.

Passer insularis, Scl. and Hartl. P. Z. S. 1881, p. 169, pl. 16 *Socotra;* Sharpe, Cat. B. M. xii. p. 321 (1888); Shelley, B. Afr. I. No. 257 (1896).

Adult male. Upper parts ashy grey mottled on the upper back with broad black shaft-stripes. Wing mostly dark brown; lesser-coverts and the scapulars pale cinnamon, the latter partially washed with grey towards the back; median and greater-coverts and the inner secondaries blackish, the former with white ends and the others with broad cinnamon margins; remainder of quills with narrow pale brown outer edges and buff inner edges; axillaries white and the under wing-coverts mottled with white. Tail brown with narrow pale brown margins to the feathers. Sides of head and an obsolete margin to the sides of the forehead white, with a broad black band through the eye from above the gape, bordering the ear-coverts above and behind, and is margined above by a broad cinnamon partial eyebrow extending back from the eye and widening out over the side of the upper neck; a broad black band from the bill down the centre of the throat; sides of the crop and body ashy white fading into buff on the centre of the abdomen and the under tail-coverts. Iris brown; bill black; tarsi and feet pale brown. Total length 5·9 inches, culmen 0·5, wing 2·9, tail 2·4, tarsus 0·8. Socotra (Grant and Forbes).

Adult female. Differs in having no black nor cinnamon on the plumage. Upper parts browner; the white portion of the head as in the male, the remainder and the sides of the neck uniform brown; a broad band of dusky ash from the bill down the centre of the throat. Total length 5·8 inches, culmen 0·55, wing 3·0, tail 2·5, tarsus 0·85. ♀, 11. 12. 98. Socotra (Grant and Forbes).

Young male. Similar to the adult female, from which it differs in being slightly greyer; the dark stripes on the mantle black; a rufous shade on the broader pale edges of the wing feathers; an ill-defined dusky band through the eye and a rufous tinge above it, behind the eye. ♂, juv. 11. 12. 98. Socotra (Grant and Forbes).

The Socotra Sparrow is confined to the island of Socotra.

Prof. J. B. Balfour, who discovered the species, found it to be common all over the island.

Passer hemileucus.

Passer hemileucus, Grant and Forbes, Bull. Liverpool. Mus. ii. p. 3 (1900) *Ald-el-Kuri Is.*

Adult male. Very like *P. insularis*, but of a paler and more faded appearance, less rufous on the wings, less black on the throat and sides of

head; under surface of the body nearly pure white. Iris brown, bill black, legs and feet fleshy horn colour. Total length 5·4 inches, culmen 0·5, wing 2·9, tail 2·4, tarsus 0·7. ♂, 5. 12. 98. Socotra, 1,400 feet (Grant and Forbes).

Adult female. Very like *P. insularis*, but with the under parts almost white. Total length 5·4 inches, culmen 0·5, wing 2·7, tail 2·2, tarsus 0·7. ♀, 22. 2. 89. Socotra.

The Ald-el-Kuri Sparrow is a native of an island of that name which is situated in the Indian Ocean about half way between Socotra and the extreme eastern corner of Somaliland.

Here Messrs. Grant and Forbes, who discovered this well marked species, procured a good series. It is a small, very pale, representative of *P. insularis*, somewhat intermediate between that bird and the Indian *P. pyrrhonotus*, which is well figured in the Catalogue of Birds (xii. pl. 5).

Passer domesticus.

Fringilla domestica, Linn. S. N. i. p. 323 (1766).

Passer domesticus, Sharpe, Cat. B. M. xii. p. 307 (1888) *Nubia;* Hartert, Kat. Vög. Mus. Senck. p. 60 (1891) *Kordofan;* Shelley B. Afr. I. No. 258 (1896).

Passer rufidorsalis, Brehm, Naum. 1856, p. 376 *Khartoum;* Witherby, Ibis, 1901, p. 246 *Omdurman;* Rothschild and Wollaston, Ibis, 1902, p. 9, pl. 1, fig. 2 *egg*.

Adult male. Forehead and crown ashy grey, the hinder half surrounded by a broad chestnut shaded chocolate band which is sometimes much mottled with ashy grey on the nape and hind neck; mantle rufous brown with broad black shaft-stripes; remainder of back, upper tail-coverts and the tail uniform brown inclining to grey on the middle back. Wings darker brown with the lesser-coverts deep rufous; median-coverts white with their basal half and generally the shafts black, remainder of the feathers with rufous brown edges with rarely any trace of white on the greater-coverts; under surface of quills brown with their inner margins whitish like the axillaries and under wing-coverts. Fore part of sides of head, feathers beneath the eye, chin and a broad band down the throat jet black, the feathers of the latter part with whitish edges mostly towards the crop; ear-coverts, sides of upper neck, sides of throat, the breast and under

tail-coverts white, with an ashy shade on the ear-coverts, sides of neck and the flanks. Iris dark brown; bill black; tarsi and feet pale brown. Total length 4·8 inches, culmen 0·45, wing 2·85, tail 2·3, tarsus 0·7. ♂, 17. 2. 01. Shendi (Rothschild and Wollaston).

Adult female. Differs in the forehead, crown and neck being uniform brown like the upper tail-coverts with an obscure darker shade surrounding the hinder half of the crown, beneath which is a pale sandy shaded band of the same colour as the sides of the upper half of the neck; another dark brown band passed through the eye and over and behind the ear-coverts; ear-coverts, cheek and under parts generally very pale ashy brown inclining to white down the centre of the throat and centre of the breast. Total length 4·7 inches, culmen 0·45, wing 2·7, tail 2·2, tarsus 0·7. ♀, 21. 3. 01. Shendi (Rothschild and Wollaston).

The Common House-Sparrow ranges over Europe, Central and Southern Asia, North and North-east Africa and has established itself on Great Comoro island and Mauritius.

According to Heuglin, it is a resident along the Blue Nile and in Kordofan, but he did not meet with it in Eastern Abyssinia nor on the White Nile. Brehm gave the name of *P. rufidorsalis* to a rather brightly coloured specimen from Khartoum; but I do not find that the characters hold good in a large series, they can be so nearly matched in English specimens and both forms appear to be equally represented all over Southern Asia. Among the adult male specimens in the British Museum there are, from Mauritius, two typical *P. domesticus* and one *P. rufidorsalis*. Of the latter, there is one from Great Comoro island, one from Khartoum and one from Berber, and of the common race one from Nubia and two from Egypt. I have come to the conclusion that it would be wrong to regard *P. rufidorsalis* as more than a variety of *P. domesticus*, it having no distinct range, but is more frequently met with in the hot than in the cold climates. The Hon. N. C. Rothschild and Mr. A. F. R. Wollaston have recently brought home, from Shendi on the Nile, twenty-one specimens, all of which they refer to *P. rufidorsalis*.

They write: "This is a southern form of *P. domesticus*.

It might be described as a small and very bright House-Sparrow, with a very bright chestnut mantle. The female can only be distinguished from the same sex of the House-Sparrow by its smaller size. It was first described by Brehm (Naumannia, 1856, p. 377), from specimens obtained at Khartoum; Emin Pasha subsequently found it at Lado, a long way further south. At Shendi it is exceedingly common, especially frequenting the patches of cultivation round the houses on the river-bank. In its habits it is very much like our House-Sparrow, and its chirping note is quite indistinguishable. We found several nests of this bird in March: they were loose structures of dry grass and feathers, and were placed in crevices of the hard mud bank on the west side of the Nile. The eggs resemble those of other Sparrows, but are devoid of all gloss; they are of a whitish buff ground colour, speckled all over with rusty brown and greyish brown, and having some underlying mauve spots: the spots and patches form a vague zone about the thick end. They are considerably smaller than those of *P. domesticus*. The greatest number of eggs found in one nest was three."

Passer jagoensis.

Pyrgita jagoensis, Gould, P. Z. S. 1837, p. 77 *Santiago Isl.*

Passer jagoensis, Fraser, P. Z. S. 1843, p. 52; Bolle, J. f. O. 1856, p. 31; Sharpe, Cat. B. M. xii. p. 323 (1888) *Cape Verde Isl.;* Shelley, B. Afr. I. No. 261 (1896); Alexander, Ibis, 1898, pp. 77, 84, 92, 97, 99, 104, 107, 111, 115, 280 *Cape Verde Isl.;* Nehrkorn, Kat. Eiers. p. 109 (1899) *egg.*

Passer erythrophrys, Bp. Consp. i. p. 510 (1850).

Passer hansmanni, Bolle, J. f. O. 1856, p. 22 *Cape Verde Isl.*

Passer brancoensis, Oust. Ann. Sc. Nat. Zool. (6) xvi. art. 5, p. 2 (1883) *Cape Verde Isl.*

Adult male. Crown and back of neck dusky ash; a broad pale cinnamon eyebrow expands behind the ear-coverts, covering the sides of the upper neck; the eyebrow in front of the eye to the nostril white; remainder of

upper parts as in *P. domesticus*, with the middle back strongly washed with rufous; cheeks, ear-coverts, sides of throat, under surface of body and under tail-coverts ashy tinted white; chin and centre of throat black. Iris dark brown; entire bill brownish yellow or black, probably according to the season; tarsi and feet pale brown. Total length 5 inches, culmen 0·5, wing 2·6, tail 2·2, tarsus 0·7. Santiago (type).

Female. Very similar to that of *P. domesticus*, but differs in having some white between the eye and nostril, and in the rufous shade on the middle back. Total length 5·0 inches, culmen 0·45, wing 2·35, tail 1·8, tarsus 0·7.

The Santiago Sparrow is confined to the Cape Verde Islands.

It inhabits all the islands of this group. The type was discovered by Darwin during his voyage in the "Beagle." On the label of a specimen of this species in the Brussels Museum, was written "Senegal," to which Temminck added "*Passer erythrophrys*," a name which Bonaparte published in 1850. Bolle, on procuring a specimen in the Cape Verde Islands, re-named it *P. hansmanni*, and a fourth name, *P. brancoensis*, has been applied to a female example from Branco Island by M. Oustalet.

With regard to the habits of this Sparrow I cannot do better than quote from Captain Boyd Alexander's notes on his Expedition to the Cape Verde Islands. While on a visit to the Governor-General, Senor Serpo Pinto, at Praya, the capital of Santiago, he observed a few individuals of *Passer jagoensis*, which, like the town members of the House-Sparrow, frequented the vicinity of houses. On his approach they used to get up and fly to the young trees that line the street and there scrape their beaks after their meals, uttering now and again chirping notes that reminded him very much of those of our Pied Wagtail. He further remarks: "We observed large flocks in the valley and on the plains, and especially near the sea. These were chiefly composed of immature birds, the males showing a slight indication of the black patch on the

throat, the feathers of the upper parts dark brown margined with light rufous, and a broad stripe of the latter colour over the eye. With the beginning of February the adults had commenced to undergo their spring moult, their plumage being anything but satisfactory in condition, and even by the end of May there were many which had some of their tail-feathers and primaries still in sheath. These Sparrows often fall victims to the Kites, and as a better safeguard against surprise they seek safety in numbers, coming together in immense flocks, and never getting far away from some good thick acacia trees wherein to take refuge, or from the vicinity of a ravine strewn with boulders, into the crevices of which they creep like mice.

"In August these Sparrows breed in large companies, many of the acacia trees on the plains being crammed with their big untidy nest-structures of the previous season. On the plains they feed on small locusts and grass-seed.

"This Sparrow is not at all particular as to where it builds its nest. Where trees are absent, hollows in the ground underneath boulders, or crevices in cliffs are chosen. The proper breeding-season commences at the end of September. When placed in a tree the nest is domed, but when in a hollow of the ground it is an open compact structure, and often lined with feathers. The eggs are four, rarely five, in number; in each clutch they are of a fairly uniform colour, with the exception of one, which is invariably lighter than the rest. In size, markings and colouration they correspond with those of the Tree-Sparrow (*P. montanus*). The adult plumage is not attained till the second year."

The egg is described by Mr. A. Nehrkorn as white with rufous brown marks, and measuring 0·76 × 0·52.

Passer motitensis.

Passer motitensis, Smith, Ill. Z. S. Afr. Birds, p. 114 (1848) *Cape Col.;* Sharpe, Cat. B. M. xii. p. 324 (1888) *Damara, Cape Col. Matabele;* Fleck, J. f. O. 1894, p. 410 *Damara, Ngami;* Shelley, B. Afr. I. No. 262 (1896); Nehrkorn, Kat. Eiers. p. 109 (1899) *egg;* Stark, Faun. S. Afr. B. i. p. 162 (1900).

Adult male. Forehead, crown, and back of neck ashy grey; sides of forehead white; from above and behind the eye, extending over the sides of the neck, is a large, pale cinnamon patch of the same colour as the back, scapulars and lesser wing-coverts; mantle with clearly-defined broad black shaft-stripes; upper tail-coverts pale brown; tail uniform dark brown; remainder of wings dark brown; median-coverts with white terminal margins; greater coverts and inner secondaries broadly edged with rufous buff, the former with some partial white ends; primaries and primary-coverts very narrowly edged with rufous buff; inner lining of wings brown with the inner edges of the quills buff and the under wing-coverts mostly white; a patch in front of eye, chin and throat black; cheeks, ear-coverts and sides of throat white; crop, breast, thighs and under tail-coverts whitish buff. Iris dark brown; bill liver brown; tarsi and feet paler brown. Total length 5·9 inches, culmen 0·55, wing 3·4, tail 2·5, tarsus 0·75. ♂, 12. 1. 67. Damara (Andersson).

Adult female. Duller and slightly paler; crown a little browner; patch from the eye over sides of neck buff; no black on throat. Wing 3·1 inches. ♀, 2. 10. 66. Damara (Andersson).

The Greater South African Sparrow ranges from south of the Cunene and Zambesi rivers into Cape Colony.

Andersson writes: "This species is found at Lake Ngami; and I also met with it at Otjimbinque, at Omapju, and near Otaiovapa. I first met with its nest at Omapju, on January 5, 1867; it was placed on the top of a thorn bush, about seven feet from the ground; and I subsequently met with several other nests during the same month. The nest is large, and is composed of coarse grass outside, and fine grass within, and has an additional lining of feathers and other soft and warm materials; it is furnished with a long entrance, sometimes a foot or more in length, which ends in a deep and wide hollow. The eggs are from three to six; but the most

frequent number is four; they are larger than the eggs of *P. arcuatus*, and are invariably covered with a glutinous matter which is difficult to remove, even with the help of water."

In the British Museum there are a male and two females, collected by Sir Andrew Smith, who described the species in 1848, and then wrote: "Only two specimens of this bird were procured, both about sixty miles to the south of the Orange river. When they were killed, they were on the ground actively employed pecking up the seeds which had fallen from the shrubs among which they were moving. The natives (Bechuanas) seeing these birds carefully carried to our tents, expressed surprise at our thinking them of value; and those who saw with what care they had been preserved, made known the proceeding to every new comer."

I can find no record of the occurrence of this species from further south nor from Natal and the Transvaal; but in Matabele-land the late Mr. Frank Oates collected four specimens in August, September and October, at the Palatswe river and near Tati.

As Mr. T. Ayres and Dr. Stark appear never to have met this species, probably its true home is Tropical South Africa, from German S.W. Africa into Matabele-land, where the species is fairly abundant, and that the typical specimens collected by Sir Andrew Smith in the Old Latakoo district were possibly stragglers.

An egg in Mr. A. Nehrkorn's collection is described as: white, with large clouded pale grey marks, and measures 0·8 × 0·6.

Passer cordofanicus.

Passer cordofanicus, Finsch. Suppl. Heugl. Orn. N. O. Afr. p. 141 (1871) *Kordofan.*

Passer rufocinctus, Fisch. and Reichen. J. f. O. 1884, p. 55 *Naiwasha;* Fisch. J. f. O. 1885, p. 136; Sharpe, Cat. B. M. xii. p. 325 (1888); Reichen. J. f. O. 1887, p. 72 *Loeru;* Sharpe, Ibis, 1891, p. 256 *Masai, Kikuyu;* Reichen. Vög. D. O. Afr. p. 195 (1894) *Masai;* Shelley, B. Afr. I. No. 263 (1896); Hinde, Ibis, 1898, p. 578 *Machako's;* Hawker, Ibis, 1899, p. 63 *Somali;* Hinde, Ibis, 1900, p. 494 *N'gong;* Nehrkorn, Kat. Eiers. p. 109 (1899) *egg;* Neum. J. f. O. 1900, p. 287 Masai.

Passer motitensis rufocinctus, Hartert, Nov. Zool. 1900, p. 42 *Nairobe.*

Adult male. Very similar to *P. motitensis*, but with the mantle distinctly browner, less rufous than the lower back and much more strongly streaked with black; cinnamon patch on sides of head and neck more contracted; ear-coverts uniform grey, gradually fading into white on the cheeks and sides of the black throat. "Iris pale yellow; bill black; legs dark." Total length 5·6 inches, culmen 0·5, wing 3·0, tail 2·1, tarsus 0·8. ♂, 29. 11. 99. Nairobi (Delamere).

Adult female. Differs from the females of *P. motitensis* in much the same manner as the males, especially in having the ear-coverts uniform grey. In the specimen before me the black throat, characteristic of the male, is indicated by a dusky grey shade. ♀, 31. 10. 99. Athi R. (Delamere).

The Kordofan Sparrow ranges from the Masai country into Somali-land and Kordofan.

In the British Museum there are specimens collected by Dr. S. L. Hinde at Machako's and N'gong; by Lord Delamere at the Athi, Gilgil and Molo rivers, as well as at Nairobi, Likipia and Soguro; and by Mr. R. Hawker at Jifa Medir in Somali-land.

Fischer procured the type of *P. rufocinctus* at Naiwasha lake, and a specimen at Loeru, and Mr. Neumann has also collected specimens in Masai-land. From Machako's Dr. Hinde writes: "Large numbers breed here in May and June. It is common in the Station. Builds sometimes in the eaves of the houses, but more often among the fruit of a banana-bunch or in

the head of the wild banana," and later, he adds: "The habits of this species are similar to those of the European House-Sparrow." Dr. Ansorge has obtained the species at Nairobi, and Mr. Jackson in the Kikuyu country. They wander eastward into Somali-land, where Mr. Hawker found them in January, and writes: "This bird was not common, and I saw only a very few of them. They did not come round my camp at Jifa Medir until I had been there for several weeks."

Heuglin met with these Sparrows in small family parties near the villages in central Kordofan, only in the beginning of the rainy season.

The Kordofan specimen originally described by Heuglin was without a label, apparently a female, as it had the throat grey. For this bird Dr. Finsch in 1871 proposed the name of *Passer cordofanicus*, to distinguish the North-east African form from its southern ally *P. motitensis*.

An egg from Masai-land is described by Mr. Nehrkorn as white with large irregularly shaped violet grey marks and measuring 0·84 × 0·58.

Passer shelleyi. (Pl. 27, fig. 2.)

Passer shelleyi, Sharpe, Ibis, 1891, p. 256 *Lado*, Shelley, B. Afr. I. No. 264 (1896).

Passer rufocinctus (nec Fisch. and Reichen.) Shelley, P. Z. S. 1888, p. 36 *Lado*.

Type. Very similar in plumage to the adult male of *P. cordofanicus*, but differs in the hinder half of the ear-coverts being jet black and contrasting sharply with the pure white of the front of the ear-coverts, cheeks and sides of throat. Bill dusky brown; iris umber brown; feet flesh-colour. Total length in the flesh 5·6 inches, culmen 0·4, wing 2·75, tail 1·8, tarsus 0·7. ♂, 9. 4. 84. Lado.

Shelley's Sparrow inhabits the Upper White Nile district. The type, an adult male, was procured by Emin at Lado on the

Ibis, 1909, p. 388.

Upper White Nile, April 9, 1884, and is now in the British Museum. This is all that is at present known regarding the species.

Passer arcuatus.

Fringilla arcuata, Gm. S. N. i. p. 912 (1788).

Passer arcuatus, Sharpe, Cat. B. M. xii. p. 333 (1888) *Damara, Cape Town, Transvaal;* Büttik. Notes Leyd. Mus. 1888, p. 240 *Mossamedes;* Sousa Jorn. Lisb. 1886, p. 167 *Benguela;* Fleck, J. f. O. 1894, p. 410 *Damara, Great Namaqua;* Shelley, B. Afr. I. No. 269 (1896); Nehrkorn, Kat. Eiers, p. 109 (1899) *egg;* Stark, Faun. S. Afr. B. i. p. 160 (1900); Haagner, Ibis, 1901, pp. 15, 16, 192 *Transvaal.*

Adult male. Head and neck jet black, with a broad patch of white surrounding the hinder half of the ear-coverts and extending over the side of the neck and nape, and encroaches on to the black of the lower throat above the crop; the black of the crown shades off into ashy grey on the hinder neck and front of the mantle; remainder of the back and the lesser wing-coverts chestnut, with the upper tail-coverts dusky black; wing mostly blackish brown with pale edges to the feathers, broadest on the inner ones; median coverts with white ends, and the pale edges of the greater coverts and the inner secondaries incline to white towards their ends; inner lining of the wings blackish, with the axillaries and most of the coverts white, and some whitish inner edges to the quills. Tail black, with the edges of the feathers pale brown inclining to rufous at their ends. Under surface of body white with a partial shade of ash on the flanks. Sides of head, throat and entire crop, jet black. Total length 6·2 inches, culmen 0·5, wing 3·0, tail 2·5, tarsus 0·85. Cape (Butler).

Adult female. Differs from the male in the dark parts of the head and throat being ashy grey and the broad white incomplete eyebrow being separated from the white on the sides of the neck by a band of ashy grey behind the ear-coverts.

The Cape Sparrow ranges from Benguela to the Cape of Good Hope and into Natal and the Transvaal.

The most northern range known to me for this species is the town of Benguela, where, according to Anchieta, it is called by the natives "Embolio." In Mossamedes Van der Kellen obtained a pair. To the south of the Cunene Mr. Fleck found

the species generally distributed over Damara and Great Namaqualand in the neighbourhood of water and dwellings, and resembling our House Sparrow in habits and voice. Stark writes: "I found it quite common on the coast of Little Namaqualand and at Saldanha Bay. At Cape Town it abounds and has become perfectly acclimatised to town life; in many parts of the Great Karroo it is a common species, as at Prince Albert, but in the fertile country to the south of the Swartzberg Range it is very scarce, and it has never been heard of in the Knysna district up to the present time, 1898. This species is very common on the Orange river, according to Dr. Bradshaw. In Natal it is absent from the coast district, but becomes common in Upper Natal, in the neighbourhood of Newcastle and elsewhere. It ranges into the Transvaal and Southern Bechuanaland. In autumn and winter these Sparrows are frequently found in considerable flocks, often consorting with other Finches and Weaver-birds; even when nesting they frequently form social communities and build many nests in the same bush or tree; occasionally I have seen a bush so packed with nests that they formed a solid mass much like one of the collective nests of a Social Weaver-bird.

"The Cape Sparrow builds indiscriminately in holes of rocks or buildings, or in holes of trees, but usually in the latter. The nest, a domed structure, is more or less flask-shaped, with an entrance from a few inches to more than a foot in length, through a horizontally projecting neck. It is constructed of small sticks, straw, dry grass, occasionally interwoven with rags and bits of paper, the cavity being warmly lined with wool and feathers. Two or three broods are reared in the year, the first eggs being laid in September. These are from three to six in number, and vary considerably in size, shape and colour; they are usually of a pale greenish blue ground colour,

thickly blotched and mottled with various shades of brown and lavender. They average 0·75 × 0·58. They are hatched at the end of twelve days. The young remain in the nest for about twenty-four days, during which time they are fed on grubs, caterpillars, and partially digested food from the crops of the old birds."

According to Mr. Haagner their eggs vary greatly, some being "almost black in colour, owing to the profusion and darkness of the blotches, and others from the same nest almost white, the blotches being very light coloured and sparsely distributed." He further observes that the eggs of *Chrysococcyx cupreus* are known to be generally deposited in the nests of these Sparrows.

Passer simplex.

Fringilla simplex, Licht. Verz. Doubl. p. 24 (1823) *Ambukohl.*

Passer simplex, Sharpe, Cat. B. M. xii. p. 339 (1888); Shelley, B. Afr. I. No. 266 (1896); Kœnig, J. f. O. 1896, pl. 7, fig. 10, *eggs;* Nehrkorn, Kat. Eiers. p. 109 (1899) *egg.*

Passer lichtensteini, Heugl. J. f. O. 1868, p. 88 *S. Nubia.*

Adult male. General plumage uniform creamy buff very slightly tinged with ash on the crown and mantle. Wing: least coverts like the back; median coverts pure white; greater coverts dusky black, with very broad white terminal margins; primary coverts dusky black with obsolete white edges; quills dusky buff shading into dusky brown at the ends, and with both webs edged with white, slightly shaded with isabelline on the outer webs of the secondaries. Tail pale dusky brown, darker towards the ends of the feathers, all of which are surrounded by buff edges, much broader on the centre feathers. Sides of forehead, feathers in front of the eye, and a few above the ear-coverts dusky black; cheek, ear-coverts and sides of throat pure white; chin and throat black. "Iris dark brown; bill white at base, clear brownish at the point and on the sides; feet yellowish." Total length 5·2 inches, culmen 0·45, wing 3·0, tail 2·2, tarsus 0·8. Algeria (Locke).

Adult female. Differs from the male in having no black on the head and neck, and the general colouring of the upper parts isabelline.

The Desert Sparrow ranges from Kordofan into the Libyan and Sahara deserts.

According to Heuglin it feeds on grain near habitations, and in its habits resembles *P. montanus*, does not frequent the mountains, but inhabits the lowlands of Kordofan, Sennaar, and the wastes between Berber and Suakin. The type came from Ambukohl on the Nile, and probably not many miles from this locality Heuglin obtained the type of his *P. lichtensteini*, nominally from Southern Nubia.

The egg, he states, resembles that of our House Sparrow, and measures 0·85 × 0·6. This description does not agree with the two eggs figured as belonging to this bird (J. f. O. 1896, pl. 7, fig. 10).

Passer diffusus.

Pyrgita diffusa, Smith, Rep. S. Afr. Exped. App. p. 50 (1836) *north of Orange R.*

Passer diffusus, Cab. J. f. O. 1878, p. 228 *Zanzibar;* Fisch. and Reichen. J. f. O. 1882, p. 148 *Bagamoyo, Pangani, Mombasa, Lamu;* Böhm, J. f. O. 1883, p. 201; Schalow *t. c.* p. 364 *Kakoma, Ugogo;* Reichen. J. f. O. 1887, p. 305 *Leopoldsville;* Sousa, Jorn. Lisb. 1887, p. 101 *Quissange;* Sharpe, Cat. B. M. xii. p. 336 (1888); Büttik. Notes Leyd. Mus. 1889, p. 75 *Cunene;* Reichen. J. f. O. 1889, p. 384 *Zanzibar;* 1890, p. 124 *Camaroons;* Shelley, Ibis, 1890, p. 164 *Aruwimi;* Reichen. J. f. O. 1891, p. 158 *Mpapwa;* id. Vög. D. O. Afr. p. 195 (1894); Shelley, Ibis, 1894, p. 22 *Nyasa;* Fleck, J. f. O. 1894, p. 410 *Kalahari;* Shelley, B. Afr. I. No. 268 (1896); Reichen. J. f. O. 1897, p. 41 *Togo;* Sharpe, Ibis, 1897, p. 513 *Zulu;* Shelley, *t. c.* p. 528; 1898, p. 379 *Nyasa;* Hartert, Nov. Zool. 1898, p. 72; Lort Phillips, Ibis, 1898, p. 398 *Somali;* Shelley, Ibis, 1899, p. 367 *Nyasa;* Alexander, *t. c.* p. 565 *Zambesi;* Jackson, *t. c.* p. 619 *Ntebi, Nandi;* Nehrkorn, Kat. Eiers. p. 109 (1899) *egg;* Sclat. P. Z. S. 1900, p. 2 *Nyasa;* Neum. J. f. O. 1900, p. 287 *E. Afr.;* Stark, Faun. S. Afr. B. I. p. 163 (1900); Shelley, Ibis, 1901, p. 165 *Kachinda, Karungwesi;* Witherby, *t. c.* p. 246 *Khartoum;* Alexander, Ibis, 1902, p. 297 *Gold Coast.*

Pyrgita swainsoni, Rüpp. N. Wirb. Vög. p. 94, pl. 33, fig. 2 (1837-40) *N.E. Afr.*

Passer swainsoni, Cass. Pr. Philad. Acad. 1859, p. 139 *Gaboon;* Reichen. J. f. O. 1875, p. 42 *Camaroons;* Fisch. J. f. O. 1877, p. 180 *Zanzibar;* 1878, pp. 266, 281 *E. Afr.;* Oust. N. Arch. Mus. (2) ii. Bull. p. 113

(1879) *Ogowé;* Böhm. J. f. O. 1883, p. 201; 1885, p. 42 *Gonda;* p. 67 *Tanganyika;* Fisch. *t. c.* p. 136 *Arusha to Naiwasha;* Dubois, Bull. Mus. R. Belg. 1886, p. 149 *Tanganyika;* Oust. Bull. Ec. Haut. Et. xxi. art. 10, p. 9 (1886) *Somali;* Reichen. J. f. O. 1887, p. 72 *Kagehi, Magala;* Matschie, *t. c.* p. 154 *Upamba;* Sharpe, Cat. B. M. xii. p. 334 (1888) *Abyssinia;* Salvad. Ann. Mus. Genov. 1888, p. 278 *Shoa;* Emin, J. f. O. 1891, p. 60 *Ugogo;* Hartl. Abhandl. nat. Ver. Bremen, 1891, p. 25 *Mtoni;* Sharpe, Ibis, 1891, p. 257 *Ukambani;* Rendall, Ibis, 1892, p. 219 *Gambia;* Sharpe, P. Z. S. 1895, p. 469 *Somali;* Shelley, B. Afr. I. No. 267 (1896); Hartert in Ansorge's Under Afr. Sun, p. 347 (1899) *Unioro, Uganda;* Nehrkorn, Kat. Eiers. p. 109 (1899) *egg;* Grant, Ibis, 1900, p. 135; 1901, pp. 286, 625 *S. Abyssinia.*

Pyrgita gularis, Less. Rev. Zool. 1839, p. 45 *Senegambia.*

Passer gularis, Rendall, Ibis, 1892, p. 219 *Gambia;* Salvad. Ann. Mus. Genov. 1901, p. 777 *Bulama Is.*

Pyrgita spadicea, Licht. Verz. Vög. Kaffernl. p. 15 (1842).

Passer occidentalis, Shelley, Ibis, 1883, p. 548 *Niger.*

Passer diffusus occidentalis, Hartert, Nov. Zool. 1900, p. 44; 1901, p. 341 *Niger.*

Passer diffusus thierryi, Reichen. Orn. Monatsb. 1899, p. 190 *Mangu;* Hartert, Nov. Zool. 1900, p. 45.

Passer diffusus ugandæ, Reichen. Orn. Monatsb. 1899, p. 190 *Uganda;* Hartert, Nov. Zool. 1900, p. 44.

Passer simplex (nec Licht.) Fraser, P. Z. S. 1843, p. 52 *Gold Coast;* Hartl. J. f. O. 1861, p. 260 *St. Thomas Is.;* Shelley and Buckley, Ibis, 1872, pp. 282, 290 *Gold Coast;* Reichen. and Lühder, J. f. O. 1873, p. 216 *Accra;* Bouvier, Cat. Ois. Marche, &c. p. 26 (1875) *Senegambia.*

Adult. Upper half of the head and neck ashy grey, passing into brown on the mantle, which latter shades into bright cinnamon on the lower back: upper tail-coverts brown. Wing: lesser coverts uniform chestnut; median coverts slightly browner, with white ends broadest on the inner feathers; greater coverts and inner secondaries broadly, and the other quills more narrowly, edged with pale brown of the same colour as the mantle; remainder of wings dark brown; inner lining dusky brown, with the axillaries and portions of the coverts and inner edges of the quills white. Tail dark brown with pale edges to the feathers. Sides of the head and neck uniform ashy grey like the crown; throat and breast paler ash, fading into white on the chin, down the centre of the throat, centre of abdomen, and the under tail-coverts, the latter with a trace of brown shaft-stripes. "Iris brown; bill quite black, in others pale greyish brown, with yellow near the base of the lower mandible; legs and toes pale greyish brown" (Andersson). Total length 5·5 inches, culmen 0·45, wing 3·4 and 3·2, tail

2·8 and 2·7, tarsus 0·7. ♂, 30. 7. 66. Otjimbinque (Andersson); ♀, 11. 4. 82. Orange R. (Bradshaw).

The Common Grey-headed Sparrow ranges over Africa generally, south of 17° N. lat.

Mr. Hartert (Nov. Zool. 1900, pp. 44, 45), in an interesting review of this species, tries to point out characters for separating *P. swainsoni*, *P. gularis*, *P. occidentalis* and *P. ugandæ* as subspecies of *P. diffusus*. With an extremely fine series before me, I cannot find any characters for recognising the above as subspecies. In the British Museum alone there are specimens from Senegal, Dakar, Gambia, Gold Coast, Abeokuta, Niger, Gaboon, Malimba, Aruwhimi, Angola, Katumbella, Damara-land, Orange river, Natal, Transvaal, Mosambique, Zambesi, Nyasa-land, Dar-es-Salaam, Zanzibar, Pangani, Ndi, Lamu, Somali-land and Abyssinia.

The type of *Pyrgita gularis*, Less., came from Senegambia. Dr. Rendall records the species as very common at the Gambia river, where he kept some as cage-birds and found them very hardy, active and wild. It is strange that Mr. Büttikofer did not collect any Sparrows in Liberia, for on my way out to the Gold Coast with Mr. T. E. Buckley, during the few hours we stopped at Sierra Leone, we saw this species, which appeared to be as plentiful there as on the Gold Coast, where we found it extremely common, and takes the place of our House Sparrow and is equally bold, and prefers the towns to the surrounding bush-country. At Accra, Dr. Reichenow found a nest of these Sparrows begun on August 10th, had five eggs in it on the 25th, and fine young birds by the end of September. The eggs were brownish white, strongly freckled with pale dusky chestnut brown, and measured 0·75 × 0·6.

Captain Boyd Alexander found these Sparrows common from Gomieri down to Accra, but absent further inland.

The type of *P. diffusus thierryi*, Reichen. was procured by

Lieutenant Thierry in Mangu, the hinterland of the German Togo colony.

In 1883 I recognised that the name *P. simplex* (Swains. nec Licht.), by which these West African Sparrows were then generally known, could not be employed, so suggested that of *P. occidentalis*, not being then aware that they had previously received the name of *Pyrgita gularis* from Lessow in 1839. The type of my *P. occidentalis* is the late Mr. Forbes' specimen from Lukoja on the Niger, where, according to his notes, it was one of the commonest birds, but Dr. Reichenow considered it to be scarce in Camaroons. In 1861 Hartlaub mentioned a specimen from St. Thomas' Island, but the locality is no doubt incorrect, as the species has been omitted from all the more recent lists of birds from that island. In Gaboon it is known to the natives, according to Marche, as the "Bandtschogoi," and at Humbe, in Benguela, Anchieta informs us it is called "Embolio" or "Kimbolio."

According to Andersson's observation these Sparrows are scarce in Damaraland but more abundant on approaching the Okovango river, and Mr. Fleck met with them in the Kalahari. The type of the species was discovered by Sir Andrew Smith in the country between the tropics and the Orange river, and I met with it at Wellington in the south of Cape Colony.

Throughout the eastern half of the continent, to as far north as the junction of the Atbara with the Nile, the species appears to be as evenly distributed as on the west side, but it gives way to some extent to *P. crassirostris* in the Masai district. For the specimens from the Uganda district Dr. Reichenow has proposed the name of *P. diffusus ugandæ*, on account of the rufous shade on the mantle and the wing being long, characters which would readily be matched by examples in the British Museum from the Gold Coast, Natal and the Zanzibar district. Mr. Jackson procured specimens only at Ntebi and Nandi, and

in Somaliland it also appears to be scarce, although it is abundant throughout Abyssinia, according to Lord Lovat. Dr. Ragazzi likewise calls the species plentiful in Shoa, and Antinori remarks that it takes the place of our House Sparrow in the villages, and breeds there in May under the roofs of the houses. Mr. Pease calls it the Common Sparrow of the upper countries, but not seen by him on the maritime plains. Heuglin met with the species at Kordofan and from the Blue Nile to Bogos and Takah, the country on the right bank of the Atbara, which is the most northern known range for the species. He describes the nest as like that of other Sparrows, composed of grass, &c., and well lined with horse-hair and feathers; but they frequently take possession of other birds' nests, generally those of the Weavers. He gives a figure of the egg (Orn. N. O. Afr. pl. 48, fig. 2), and calls it similar to that of *P. domesticus*, measuring 0·8 × 0·72. Mr. Kuschel describes eggs of this species from the Gold Coast, as being of a stout oval form, with thin shells and a moderate gloss, but very variable in colour, the ground being white or rusty yellow. Those with the white ground have dusky violet or brownish red spots, clustered together at the thick end so as to almost hide the pale ground colour, while those of a rusty yellow shade lack the violet marks, but the obtuse end is covered with brownish red spots. They measure 0·77 to 0·78 × 0·63 to 0·64.

Passer crassirostris.

Pyrgita crassirostris, Heugl. J. f. O. 1867, p. 299 *Fazokl.*
Pseudostruthus gongonensis, Oust. Le Naturaliste, 1890, p. 274 *Gongoni.*
Passer gongonensis, Sharpe, P. Z. S. 1901, p. 618, *Omo R. Akara.*
Passer diffusus gongonensis, Hartert, Nov. Zool. 1900, p. 45 *Nairobe.*
Passer swainsoni (nec Rüpp.) Shelley, P. Z. S. 1881, p. 589 *Melinda;* Jackson, Ibis, 1899, p. 619 *Kibwesi, Elgeyu.*

Adult. Similar in colouring to *P. diffusus*, but differs in having the head and under parts slightly browner, and being a larger bird with a much stouter bill. "Iris hazel; bill black; feet pale brown" (Jackson). Total length 6·6 inches, culmen 0·6, wing 3·8, tail 2·8, tarsus 0·8. ♂ and ♀. Mt. Kenya (Delamere.)

The Thick-billed Sparrow inhabits Eastern Equatorial Africa between 5° S. lat. and 12° N. lat.

The most southern locality known to me for this species, is the village of Gongoni near Mombasa; here M. Gierra procured the type of *Pseudostruthus gongonensis*. In the British Museum there are four specimens which were presented to me by Sir John Kirk from Melinda and Lamu; one of Hildebrandt's from Kitui in Ukamba and five collected by Lord Delamere from Kikuyu, Lake Baringo and Msara on the north eastern side of Mount Kenia.

Dr. Ansore has procured the species at Nairobe, and Mr Jackson obtained others at Kibwesi and Elgeyu, where, according to his notes, "this is the common Sparrow of the country." To the north of Lake Rudolf, Dr. Donaldson Smith met with the species at the Omo river and in the Akara country. The most northern range known for the species is Fazokl on the Blue Nile, from whence the type came, and was labelled *Pyrgita crassirostris* by Prince Paul of Würtemberg, and has been well described under that name by Heuglin in 1867.

Passer emini.

Sorella emini, Hartl. J. f. O. 1880, p. 211 *Lado;* Fisch. J. f. O. 1885, p. 136 *Nguruman;* Hartl. Zool. Jahrb. 1886, p. 340 *Lado;* Reichen. J. f. O. 1887, p. 72 *Wembere;* Shelley, P. Z. S. 1888, p. 36 *Lado, Redjaf;* Reichen. Vög. D. O. Afr. p. 196 (1894) Neum. J. f. O. 1900, p. 287 *Kavirondo.*

Passer emini, Sharpe, Cat. B. M. xii. p. 332 (1888) *Lado;* id. Ibis, 1891, p. 257 *Njemps;* Shelley, B. Afr. I. No. 270 (1896); Jackson, Ibis, 1899, p. 619 *Elgeyu, Guasa-Molo R.*

Adult male in breeding plumage. Entire head, neck, body, lesser wing-coverts, scapulars, upper and under tail-coverts and under wing-coverts uniform rich deep cinnamon, inclining to chocolate brown on the head and throat; remainder of the wings and the tail blackish brown, with rather narrow buffy edges to the feathers, widening and inclining to cinnamon on the inner greater coverts; under surface of quills with whitish inner edges. "Iris brown; bill black; tarsi and feet reddish brown." Total length 4·8 inches, culmen 0·35, wing 2·45, tail 1·5, tarsus 0·6. ♂, 22. 6. 81. Lado (Emin).

Adult female. Top and sides of the head and the neck ashy brown, with a rather obscurely marked eyebrow, from the nostril to the nape pale cinnamon, and a wash of that colour on the sides of the upper neck; upper back slightly browner and strongly streaked with broad, blackish shaft-stripes; scapulars, middle and lower back pale cinnamon, with the upper tail-coverts browner. Wings and tail dark brown, with narrow pale brown edges to the feathers; lesser wing-coverts more uniform rufous brown; median coverts tipped with white, forming a partial bar; under surface of wing, with the coverts and inner edges of the quills white, and the rest of the quills dusky brown; chin and throat cinnamon, passing into pale, ashy brown on the sides of the lower neck, chest and flanks; abdomen and under tail-coverts buff. "Iris brown; bill blackish; paler on the lower mandible; tarsi and feet reddish brown." Total length 4·75 inches, culmen 0·35, wing 2·45, tail 1·6, tarsus 0·6. ♀, 22. 6. 81. Lado (Emin).

Male, in imperfect plumage. Somewhat similar in plumage to the adult female, but chiefly differs in the throat and under surface of the body being white, irregularly mottled with deep cinnamon feathers, most numerous on the upper throat, and the top and sides of the head and neck similarly mottled; the white ends to the median coverts much broader, and the under wing-coverts mottled with deep cinnamon. ♂, ♂, 18. 2. 84. Lado (Emin).

Emin's Sparrow inhabits Central Africa between 4° S. lat. and 10° N. lat.

The most southern range known to me is the Wembere plateau to the south of Victoria Nyanza, where Fischer collected specimens, as well as at Nguruman, where he found them in small flocks with other Finches feeding in the cornfields.

It ranges westward to the White Nile where Emin procured specimens at Redjaf and Lado, at which latter place he discovered the type.

To the north-east of Victoria Nyanza Mr. Jackson found

these Sparrows very plentiful at Njemps in July, and fairly so at Elgeyu in August, and he procured two specimens at the Guasa Molo river in September. Mr. Neumann records it from Kavirondo, and Antinori has obtained an adult male at Daimbi in Shoa, which is the most northern known range for this species.

Passer luteus.

Fringilla lutea, Licht. Verz. Doubl. p. 24 (1823) *Dongola*.
Passer luteus, Sharpe Cat. B. M. xii. p. 340 (1888) *Abyssinia;* Shelley, B. Afr. I. No. 271 (1896); Nehrkorn, Kat. Eiers. p. 109 (1899) *egg;* Witherby, Ibis, 1901, p. 247 *Kawa;* Rothschild and Wollaston, Ibis, 1902, p. 10 *Shendi*.

Adult male. Entire head, neck and under surface of the body canary yellow; upper back and scapulars deep cinnamon; lower back yellow partially washed with cinnamon; upper tail-coverts ashy brown. Wing mostly brownish black with the least series of coverts dusky yellow; median and greater coverts with rufous-tinted buff ends; quills with pale edges, narrow and buff on the primaries, much broader and of a cinnamon shade on the secondaries; inner lining of wings dusky brown with brownish buff inner edges to the quills, and the coverts mostly white. Tail blackish brown with pale tawny brown edges; under tail-coverts brownish buff with dark centres. Iris brown; bill horn colour; legs pale brown. Total length 5 inches, culmen 0·4, wing 2·5, tail 2·0, tarsus 0·65. ♂, 26. 6. 50. Khartoum (J. W. von Müller).

Female. Differs in the forehead, crown, back of neck, back, scapulars and least series of wing-coverts being pale brown; under parts buff shaded with brown on the sides of the head and sides of the neck and body. Total length 4·4 inches, culmen 0·4, wing 2·5, tail 1·9, tarsus 0·65. ♀, Sennaar (M. Parreyss).

The Abyssinian Golden-Sparrow inhabits the Abyssinian district between about 10° and 20° N. lat.

According to Heuglin, in habits and note they much resemble our common House-Sparrow. He found them in the early summer in large flocks along the Blue Nile, in Kordofan and Southern Nubia, to as far north as the Nile between Berber and Dongola. In June and July he met with them in great

1. Passer euchlorus.
2. Petronia flavigula.

numbers at the town of Khartoum, perching on the walls and roofs of the houses, and in September and October they resorted to the open country in thousands with their young. The nest is of an oval form, deeper than wide, composed of fine dried grass and firmly fixed to a bough from two to twelve feet from the ground. They lay three to four eggs, which are white spotted with brown, very similar in colouring to those of our common House-Sparrow, and measure 0·75 × 0·55.

The Hon. N. C. Rothschild and Mr. A. F. R. Wollaston found these beautiful yellow Sparrows exceedingly abundant at Shendi, increasing in number towards the end of March. "Flocks of fifty and upwards might be seen at any time flying northwards along the river-bank; they were never seen to proceed in the other direction. They are very partial to water, and might sometimes be seen in enormous flocks bathing in the shallow pools of the river."

On the White Nile, according to Mr. Witherby, "This species was common and well distributed. Generally to be found in small flocks of twenty or so, it was very wild, and frequented the bushes and trees in the more open country. When flying it has a twittering Linnet-like note, while in the trees it chirps like a House-Sparrow. We saw an enormous flock of these birds in some tall bushes on the river-bank near Kawa. They were exceedingly restless, rising in clouds from the bushes as we approached and settling again further on, only to rise when we neared them."

Passer euchlorus. (Pl. 28, fig. 1.)

Auripasser euchlora, Bp. Consp. i. p. 519 (1850) *Abyssinia, Arabia.*
Passer euchlorus, Sharpe, Cat. B. M. xii. p. 341 (1888) *den;* Shelley, B. Afr. I. No. 272 (1896); Yerbury, Ibis, 1896, p. 27; Hawker, Ibis, 1898, p. 375 *Aden;* Nehrkorn. Kat. Eiers. p. 109 (1899) *egg.*
Fringilla albeola, Müll. Naum. 1851, p. 29 "*S. Africa.*"!
Auripasser muelleri, Bp. Notes, Orn. Coll. Delattre, p. 17 (1854).

Adult male. Entire plumage, with the exception of the wings and tail, bright canary yellow. Lesser, median and greater-coverts, as well as the under-coverts of the wing yellow, slightly whiter than the body; primary coverts, quills and tail-feathers dusky brown with broadish pale edges of brownish buff; a partial grey tinge on the wings. Iris brown; bill and legs pale brown. Total length 4·8 inches, culmen 0·35, wing 2·3, tail 2·0, tarsus 0·65. ♂, 15. 3. 95. El Khawi (Yerbury).

Adult female. Differs in the upper parts being pale brown where they are yellow in the adult males; mantle with a few obscure dark streaks; under-parts and sides of head buff, slightly browner on the ear-coverts and with a partial faint tinge of yellow on the throat; under wing-coverts buff. Total length 4·4 inches, culmen 0·35, wing 2·3, tail 2·0, tarsus 0·65. ♀, 2. 10. 99. El Khawi (Percival and Dodson).

Immature male. Exactly like the adult female, with the exception of the forehead being yellowish white. ♂, juv. 4. 10. 99. El Khawi.

The Arabian Golden Sparrow inhabits Arabia and Eastern Abyssinia.

All that I know regarding the occurrence of this species in Africa, is that one of Hemprich and Ehrenberg's types, in the Berlin Museum, is labelled as coming from Eastern Abyssinia, and the type of *Fringilla albeola*, nominally from S. Africa, must have been a cage-bird, if the locality is correct.

Its true home is Southern Arabia, here Mr. Hawker shot one in company with a flock of *P. domesticus* near Lahej, where it is very common according to Colonel Yerbury, who further writes: "One or more big flocks have established themselves now in Aden itself, breeding in the thorny trees at the tanks and alongside the gaol wall. They are gregarious and build a thick nest of thorny twigs."

Genus VII. PETRONIA.

Very similar to *Passer* in general structure, but is characterised by the nostrils being exposed and the wings more lengthened. A yellow patch at the base of the throat is a useful character for distinguishing members of this genus.

	Type.
Petronia, Kaup. Naturl. Syst. p. 158 (1829)	P. petronia.
Xanthodira, Sundev. Œfv. K. Vet. Ak. Förh. Stockh. 1850, p. 127	P. dentata.

The genus ranges over Africa generally, northward into Central Europe and eastward to China. It comprises six known species, of which three are confined to Tropical and South Africa.

KEY TO THE SPECIES.

a. Smaller: wing 2·9 to 3·1 inches; less yellow on the throat . . . . . *dentata*.
  1.*a* Patch above the ear-coverts rufous . . . *ad*.
  b^1 Patch above the ear-coverts sandy buff . . *juv*.
b. Larger: wing 3·2 to 3·5; more yellow on the throat.
  c^1. Mantle uniform; no pale eyebrow . . . *pyrgita*.
  d^1. Mantle mottled; a large buff eyebrow . . *flavigula*.

Petronia dentata.

Xanthrodira dentata, Sundev. Œfv. K. Vet.-Ak. Förh. Stockh. 1850, p. 127; Salvad. Ann. Mus. Genov. 1884, p. 176; 1888, p. 277 *Shoa;* 1901, p. 777 *Bissao.*

Petronia dentata, Sharpe, Cat. B. M. xii. p. 295 (1888) *Abyssinia;* Shelley, B. Afr. I. No. 253 (1896); Hartert, Nov. Zool. 1899, p. 414 *Gambaga;* Grant, Ibis, 1900, p. 134 *S. Abyssinia;* Alexander, Ibis, 1902, p. 296 *Gold Coast.*

Pyrgita dentata, Rendall, Ibis, 1892, p. 219 *Gambia.*

Pyrgita nigriceps, Licht. Nomencl. Av. Berol. p. 47 (1854) *Bahjooda.*

Fringilla (Passer) lunatus, Heugl. Syst. Uebers, p. 42 (1856) *Abyssinia.*

Petronia albigularis, Brehm. Naum. 1856, p. 377 *Sennaar.*

Passer canicapillus, Blyth, Ibis, 1865, p. 46 *Hab. ?*

Pyrgita fazoglensis, Heugl. J. f. O. 1867, p. 299.

Adult. Upper parts uniform brown with the crown greyish; a broad rufous eyebrow extending back from the eye shades off into the brown on the back and sides of the neck; wing-coverts like the back but with faintly marked paler edges to the median and greater coverts; quills and tail-feathers darker brown with narrow pale edges; under-surface of wings brown with the coverts and inner edges of the quills whitish. Chin, upper half of throat, breast and under tail-coverts white, shading into pale brown on the sides of head and throat, lower throat and sides of body; on the middle of the throat is generally visible a pale yellow patch. "Iris reddish brown; bill dusky with base of lower mandible flesh colour; feet dusky

ash," Heugl. Total length 4·5 to 4·9 inches, culmen 0·45, wing 2·9 to 3·1, tail 2·0, tarsus 0·6. Gambaga; ♂, 29. 7. 98. Abyssinia; ♀, 31. 7. 68. ♂ ♀, 15. 8. 68.

Young. Differs in having the crown, back and sides of neck uniform brown and the eyebrow sandy buff; mantle partially mottled with blackish brown and broad pale or whitish ends to the median and greater-coverts and the inner webs of the quills somewhat broadly edged with rufous buff. Gambaga; ♀, 9. 1. 99. White Nile; ♀, 5. 00. Abyssinia; ♂, 24. 7. 68. Five other specimens in the British Museum are intermediate between the adults and young described, but none of these have any grey on the head.

Were it not that the specimens have been sexed by their collectors, one would have expected the grey crowned birds with the rufous eyebrow and uniform backs to have been adult males and the others adult females and immature birds. Against their being specifically distinct, is that both forms range across northern tropical Africa from 0° to 40° E. long. and have been found at the same places.

The Lesser Rock-Sparrow inhabits northern Tropical Africa between about 9° and 18° N. lat.

The occurrence of this species in West Africa was first made known to us by Dr. P. Rendall, who procured it close to Bathurst on the Gambia river, and Sig. Fea has obtained specimens on the Bissagos islands at Bulamo and Bissao. At Gambaga, about 250 miles due north of Cape Coast Castle, Captain W. Giffard collected a male and two females in January, August and November, 1898, and Col. H. P. Northcott has presented to the British Museum a male and an apparently young female killed at the same place in January and July. Captain Boyd Alexander has, more recently, met with the species at Walwali, Gambaga and Karaga, so these birds must be not only resident but also plentiful in this district.

These Sparrows cross the continent, for they range over Abyssinia generally, but I cannot trace them further south than 9° N. lat. In this latitude, on the Nile near the mouth of the Seraf river, Captain H. M. Dunn obtained a specimen, and Lord Lovat shot one at Maritchi in South Abyssinia. In

Shoa according to Dr. Ragazzi it is abundant, and he collected specimens at Farré, and Antinori others at Ambo-Karra.

From Northern Abyssinia there are specimens in the British Museum collected by Dr. Blanford and Mr. Jesse at Rairo, Anseba, Gelamet, Bejook and Waliko.

Heuglin met with them along the Blue Nile and its tributaries, near the White Nile, and in the Abyssinian lowlands. They were found in pairs or small flocks along the openings in the woodlands or perched on the bushes in the deserts, generally near water. The type of *Pyrgita nigriceps*, Licht., he informs us, was really procured in the Desert of Bahjooda, which separates Ambukol from Khartoum, and was incorrectly labelled as coming from Egypt. He further remarks that in habits and note they resemble our House-Sparrows, and that their eggs, which he found in a Weaver-bird's nest, were pure white.

Petronia pyrgita.

Xanthodina pyrgita, Heugl. J. f. O. 1862, p. 30 *Sennaar*.

Petronia pyrgita, Sharpe, Cat. B. M. xii. p. 296 (1888) *Abyssinia;* Reichen. Vög. D. O. Afr. p. 195 (1894) *Teita;* Sharpe, P. Z. S. 1895, p. 469 *Somali;* Shelley, B. Afr. I. No. 254 (1896); Elliot, Field-Columb. M. i. No. 2, p. 34 (1897); Lort Phillips, Ibis, 1898, p. 397; Hawker, Ibis, 1899, p. 63 *Somali;* Jackson, Ibis, 1899, p. 619 *Ravine;* Neum. J. f. O. 1900, p. 287 *Loita Mt.;* Sharpe, P. Z. S. 1901, p. 302 *Somali;* p. 618 *Akara;* Grant and Reid, Ibis, 1901, p. 624 *S. Abyssinia;* Rothschild and Wollaston, 192, p. 10 *Shendi*.

Xanthodira pyrgita, Cab. J. f. O. 1878, p. 229 *Ndi;* Fisch. and Reichen. J. f. O. 1879, p. 353 *Tana R.;* Fisch. J. f. O. 1885, p. 136 *Arusha; Wapokomo*.

Gymnorhis pyrgita, Shelley, Ibis, 1885, p. 408 *Somali*.

Adult male. Upper parts uniform ashy; lesser wing-coverts like the remainder of the feathers of the wings and tail dark brown, with rather narrow brownish white edges; under surface of the wings brown with

the coverts and inner margins of the quills whitish ; sides of the head and neck brown like the crown, with an indistinct pale patch behind and round the eye ; chin and centre of throat white ending in a pale yellow patch ; sides of throat, crop and sides of body pale ashy brown ; centre of breast, thighs and under tail-coverts white. "Iris light brown ; bill horn ; legs dark grey." Total length 5·7 inches, culmen 0·45, wing 3·2, tail 2·5, tarsus 0·7. ♂, 25. 11. 97. Daboloc (Hawker).

Heuglin's Rock-Sparrow ranges over Eastern Africa from the Pangani river into Abyssinia.

The most southern range known to me for this species, is the Pare mountains of Central German East Africa. Here Fischer met with it, as well as in Arusha, near Lake Naiwasha, and in the Wapokomo country on the left bank of the Tana river. Hildebrandt procured a specimen at Ndi in Teita, and Mr. Neumann one on the Loita mountain. Mr. Jackson obtained the only one he saw at the Eldoma ravine: "it was hopping about the ground, and resembled a Sparrow in its habits." The species appears to be very generally distributed over Somaliland as specimens have been collected there by most of the naturalists who have visited that country. On the label of a specimen shot by Mr. J. Bennett Stanford at Lehilla, in June, 1897, is written : "Common on high ground, native name 'Anass.'" Dr. Donaldson Smith, during his expedition to Lake Rudolf, procured specimens in the Akara country as well as in Somaliland.

In Southern Abyssinia Mr. Pease collected specimens at Daira Aila, where they were rather shy and not frequently seen. Further north Dr. Blanford procured the species in Eastern Abyssinia, at Lower Sooroo, and Esler has collected several specimens at Ailet. Heuglin records it as occurring singly in the wooded parts of the western slope of the Bogos highlands near Barka, and likens their note to that of our Yellow-Hammer.

The Hon. N. C. Rothschild and Mr. A. F. R. Wollaston

procured two specimens at Shendi on the Nile, which is the most northern locality yet known for this species, and they remark: "This was a rare bird at Shendi; besides the specimens obtained we saw no others. They were found at the top of a tall acacia tree on the west bank of the Nile, and when the first was shot the second flew to the ground and pecked its dead mate most savagely."

Petronia flavigula. (Pl. 28, fig. 2.)

Xanthodira flavigula, Sundev. Œfv. K. Vet. Ak. Förh. Stockh. 1850, p. 98, *Transvaal;* Reichen. J. f. O. 1887, pp. 72, 305 *Usure, Leopoldville;* Sousa, Jorn. Lisb. 1886, p. 167 *Caconda;* 1888, p. 228 *Quindumbo.*

Petronia flavigula, Reichen. Vög. Deutsch O. Afr. p. 195 (1894) *Kakoma, Igonda;* Shelley, B. Afr. I. No. 255 (1896); id. Ibis, 1898, p. 379; 1899, p. 282 *Zomba;* Alexander, *t. c.* p. 564 *Zambesi.*

Petronia petronella, Bp. Consp. i. p. 513 (1850) *S. Afr.;* Sharpe, Cat. B. M. xii. p. 297 (1888) *Damara, Cape Col. Natal, Tete;* Shelley, Ibis, 1893, p. 27; 1894, p. 22 *Zomba;* Marshall, Ibis, 1896, p. 246 *Mashona;* Sharpe, Ibis, 1897, p. 513 *Zulu;* Marshall, Ibis, 1900, p. 239 *Mashona;* Stark, Faun. S. Afr. B. i. p. 157 (1900); Ivy, Ibis, 1901, p. 19 *nest.*

Xanthodira dentata (nec. Sundev.) Cab. J. f. O. 1878, p. 229 *Ndi;* Böhm, J. f. O. 1883, p. 201; Schalow, *t. c.* p. 364 *Kakoma;* Böhm. J. f. O. 1885, p. 60 *Gonda.*

Adult. Upper parts brown, rather darker on the crown, and mottled with blackish brown on the mantle; a broad whitish eyebrow extending back from the front of the eye. Wings darkish brown; the paler edges to the feathers broaden out into whitish ends on the median and greater coverts, and form two ill-defined bands on the wings; quills with narrow pale rufous-tinted edges; their under surface brown, with narrow pale inner edges to the quills, and the coverts pale brown, partially mottled with white. Tail dark brown with obsolete narrow whitish edges. Under parts very pale brown, passing into white on the chin, upper throat, centre of breast and under tail-coverts, and into dark brown between the ear-coverts and the eyebrow; a distinct pale yellow patch between the base of the white throat and the crop. "Iris umber brown; bill dusky brown, with the under mandible pale; tarsi and feet dusky ash." Total length 6·0 inches, culmen 0·55, wing 3·5, tail 2·5, tarsus 0·75. 2. 7. 84. Pinetown (T. L. Ayres).

Young. Similar to the adult, but without the yellow throat spot. ♂, 26. 10. Pinetown (T. L. Ayres).

The Southern Rock-Sparrow inhabits Africa to the south of about 3° S. lat.

On the Congo, Bohndorff procured the species at Leopoldville. In Benguela specimens have been collected by Anchieta at Caconda and Quindumbo, and it is called by the natives "Suesue." Andersson procured others at Elephant Vley in Damaraland, and wrote: "I have only met with this species near the Okavango river." In the British Museum there are specimens from Eland's Post, Kingwilliamstown, and Pinetown near Durban, and they are apparently common in these districts. In the Transvaal, according to Mr. T. Ayres, "this species affects the wooded and warm country where rocks abound," and during his journey into Mashonaland he found them in August and September near the Umfuli river "frequenting the high trees, and feeding much as the Tomtits do, hanging about the outer twigs and eating the young buds, &c.; as however, food of all kinds is scarce for birds, this may not be a usual habit. They are now mostly in pairs and their loud Sparrow-like note, often repeated in the early morning, attracts attention to them." In Mashonaland Mr. Guy Marshall records them as abundant at all seasons, generally seen feeding in small flocks on the ground, but occasionally searching the trees and bushes for insects like Tits. With regard to their habits Stark writes: "This species appears to feed very largely on insects, which it finds in crevices of rocks and in the bark of trees. It also eats small seeds of grass and various weeds. It builds a large sparrow-like nest of dry grass and feathers in the hole of a tree or rock, and lays three or four eggs, which resemble those of the Cape Sparrow, but they are slightly larger as a rule, and more sparingly but distinctly spotted with dark slaty brown."

Mr. Ivy, a resident at Grahamstown, writes: "I have found many nests of this species in the decayed centres of

the branches of the euphorbia trees. The bird makes a small opening in the bark, and on a deposit of a few feathers and down in the hollow of the branch, lays from three to four dull brown unspotted eggs. It breeds in companies, and the eggs are difficult to obtain, as the branches of the euphorbias are high up above the ground, and though heavy are brittle and rotten." He further remarks that the eggs are very unlike those of *Passer arcuatus*.

In the British Museum there is a specimen from Tete on the Zambesi, and Captain Boyd Alexander obtained a pair in the wooded country near the Kafue river. To the north of the Zambesi specimens have been collected at Zomba, Kakoma, Igonda, Usure (3° 30′ S. lat.), and Ndi in the Teita country, which is the furthest north that I can trace the species.

With regard to the correct name for this species: when Bonaparte described it under the title of *Petronia petronella* he referred to it *Xanthodina flavigula*, Sundev., thus proving that the latter name has priority.

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